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UNITED STATES MILITARY ACADEMY

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1968 • 1969
CATALOGUE

DUTY

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COUNTRY



UNITED

STATES



MILITARY ACADEMY

CATALOGUE

1968—1969

ONE HUNDRED SIXTY-SEVENTH YEAR

1968

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Academic Calendar 1968-69

1968

1 Jul	Mon	New Fourth Class enters (class of '72)
4 Jul	Thu	Independence Day (Duties Suspended)
25 Aug	Sun	Beginning of Reorganization Week
31 Aug	Sat	End of Reorganization Week
2 Sep	Mon	Labor Day (Duties Suspended)
3 Sep	Tue	First Term begins
11-13 Oct	Fri-Sun	Homecoming
12 Oct	Sat	(Classes Suspended)
11 Nov	Mon	Veterans Day (Classes Suspended)
28 Nov	Thu	Thanksgiving Day (Classes Suspended)
21 Dec	Sat	Christmas Leave begins at 12:00 Noon

1969

5 Jan	Sun	Christmas Leave ends at 5:30 P.M.
17 Jan	Fri	Graduate Record Examination for 1st Class
18 Jan	Sat	First Term ends at 12:00 Noon
20 Jan	Mon	Second Term begins
22 Feb	Sat	Washington's Birthday (Classes Suspended)
20 Mar	Thu	Spring Leave for three upperclasses begins at 3:15 P.M.
21-24 Mar	Fri-Mon	Plebe Parent Weekend
24 Mar	Mon	Spring Leave for three upperclasses ends at 6:00 P.M.
17 May	Sat	Armed Forces Day
29 May	Thu	Second Term ends at 12:00 noon
30 May	Fri	Memorial Day (Duties Suspended)
1 Jun	Sun	Baccalaureate Sunday
4 Jun	Wed	Graduation Day
1 Jul	Tue	New Fourth Class enters (Class '73)



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Color Guard on parade

Mission of The Military Academy

The mission of the United States Military Academy is to instruct and train the Corps of Cadets so that each graduate will have the qualities and attributes essential to his progressive and continued development throughout a career as an officer of the Regular Army.

Inherent in this mission are the following objectives:

1. Mental—To provide a broad collegiate education in the arts and sciences leading to the Bachelor of Science degree.

2. Moral—To develop in the cadet a high sense of duty and the attributes of character with emphasis on integrity, discipline, and motivation essential to the profession of arms.

3. Physical—To develop in the cadet those physical attributes essential to a career as an officer of the Regular Army.

4. Military—To provide a broad military education rather than individual proficiency in the technical duties of junior officers. Such proficiency is, of necessity, a gradual development, the responsibility for which devolves upon the graduates themselves and upon the commands and schools to which they are assigned after being commissioned.

Graduation and Conferring of Degree

A cadet of the First Class who has been found by the Academic Board to have successfully completed all courses of instruction and training, and otherwise is recommended, shall thereupon become a graduate of the United States Military Academy with the degree of Bachelor of Science.

Promotion and Commissioning of Graduates

Graduated cadets are allowed full pay as second lieutenants from the date of graduation when they are promoted and appointed in the Regular Army.

Administration

The United States Military Academy is under the general direction and supervision of the Department of the Army. The Secretary of the Army has designated the Chief of Staff of the Army as the officer in direct charge of all matters pertaining to West Point.

The immediate government and military command of the Academy and the military post at West Point are vested in the Superintendent. The Dean of the Academic Board coordinates the activities of the academic departments and advises the Superintendent on academic matters. The administration and military training of the Corps of Cadets are under the responsibilities of the Commandant of Cadets, who is also head of the Department of Tactics.

SUPERINTENDENT:

Maj. Gen. Donald V. Bennett, USA

DEAN OF THE ACADEMIC BOARD:

Brig. Gen. John R. Jannarone, USA

COMMANDANT OF CADETS:

Brig. Gen. Bernard W. Rogers, USA

INFORMATION OFFICER:

Col. Joel B. Stephens

DIRECTOR OF ADMISSIONS AND REGISTRAR:

Mr. John I. Woodruff

History of West Point

The United States Military Academy was established officially on 16 March 1802 at West Point, a key Hudson River military fortress during the Revolution, and was opened on 4 July 1802.

Two compelling reasons made the formation of an American military academy at that time both logical and necessary: the experience of the Revolutionary War and the ominous international political situation when Thomas Jefferson became President in 1801.

The experience of the Revolutionary War, during which America had to rely in large part on foreign drillmasters, artilleryists, and trained engineers, made the military and political leaders of the day energetic backers of a military academy. The earliest proposal was in 1776 by Col. Henry Knox who recommended "An Academy established on a liberal plan . . . where the whole theory and practice of fortification and gunnery should be taught." The papers of Gen. Benjamin Lincoln, Gen. Jedediah Huntington, Secretary of War Timothy Pickering, John Adams, Alexander Hamilton, and George Washington mention time and again the need for an academy. In his annual messages to Congress, Washington always included a plea that the Congress provide facilities for the study of military art. In 1797 in his eighth annual message, for example, he said:

The institution of a military academy is also recommended by cogent reasons. However pacific the general policy of a nation may be, it ought never to be without a stock of military knowledge for emergencies. . . . [The art of war] demands much previous study, and . . . [knowledge of that art] . . . in its most improved and perfect state is always of great moment to the security of a nation. . . . For this purpose an academy where a regular course of instruction is given is an . . . expedient which different nations have successfully employed.

The military academies that "different nations" had "successfully employed" and that Washington likely had in mind were England's Royal Military Academy at Woolwich, founded in 1741, and France's Ecole Polytechnique, founded in 1794. The Royal Military College at Sandhurst in England was founded the same year as our own Academy, 1802. And Washington quite obviously realized that complete independence for America called not only for the severance of political ties from England and the formation of an independent political state, but also for independence in every facet of national life and culture: in law, religion, agriculture, shipbuilding, trading, manufacturing, and military science. How deeply he continued to feel about the need for an Academy appears in a letter written two days before his death and addressed to Alexander Hamilton:



The Washington Monument

The establishment of an Institution of this kind, upon a respectable and extensive basis, has ever been considered by me as an object of primary importance to this country; and while I was in the Chair of Government, I omitted no opportunity of recommending it, in my public speeches and other ways, to the attention of the Legislature.

The second compelling reason for the immediate establishment of an American military academy was the ominous international political situation of 1801-02. The previous two decades had been troublesome ones. The weak and ineffectual Articles of Confederation and Perpetual Union, trouble with the Barbary pirates, Shays' Rebellion, boundary disputes, frontier battles, and currency quarrels had plagued the young nation, and now it was threatened by the danger of involvement in the complexities that were coming as an aftermath of the French Revolution of 1789. Public opinion moved toward more energetic national government and better trained armed forces.

So it was that Congress, by its Act of 16 March 1802, authorized a Corps of Engineers, set its strength at five officers and ten cadets, and provided that it be stationed at West Point in the State of New York and constitute a Military Academy.

The garrison site of West Point, consisting of 1,795 acres purchased from Stephen Moore in 1790, had been occupied by the Army since 1778. Hence, barracks and other buildings, while inadequate, were available for housing and instruction, and Maj. Jonathan Williams, grandnephew of Benjamin Franklin and Chief of the Corps of Engineers, who had been appointed as the first Superintendent, was able to open the Academy on 4 July 1802 with ten cadets present.

The initial purpose of the Academy was to train military technicians for all branches of the military service, to encourage the study of military art nationally and thus raise the level of training of the militia, and to encourage the practical study of every science. This last, it should be noted, was advanced at a time when many other American academic institutions looked at the sciences with suspicion and hostility. How well the Academy succeeded in its purpose for the first 10 years of its existence was summarized by the most authoritative historian of that period of American life, Henry Adams. In his *History of the United States* (9 vols., 1889-91), covering the Jefferson and Madison administrations, Adams offers the tribute that American scientific engineering ". . . owed its efficiency and almost its existence to the military school at West Point established in 1802."

In the year 1812, the growing threat of war with England impelled Congress to pass the Act of 29 April 1812 by which the strength of the Corps of Cadets was increased to 250, the academic staff was enlarged,

and the cadets were placed under the discipline of published regulations. A chaplain was authorized who in addition to his religious duties was "to officiate as Professor of Geography, Ethics, and History." The act required also that the cadets be taught "all the duties of a private, a noncommissioned officer, and an officer." This requirement, says Emory Upton in *The Military Policy of the United States* (1904), was the "key to the character for efficiency and discipline which the graduates have since maintained."

The record of the War of 1812 shows that the Academy graduates served their country well. A quarter of the more than 100—all under 30 years of age—who saw action were killed or wounded; and not one of the fortifications constructed under their direction was captured. Henry Adams was appreciative of their technical skill. "During the critical campaign of 1812," he wrote, "the West Point Engineers doubled the capacity of the little American army for resistance."

The experience of the War of 1812 that gave the Nation new self-assurance affected the Academy's educational aims in the period of peace which followed. No longer was the enemy an immediate threat on our borders; American nationality had been firmly established. National interest called now for canals, roads, railroads, and the development of the soil and its mineral wealth. The accurate mapping of rivers, the deepening of their channels, the constructing of light-houses and beacon lights—these were needed to make communication easier. And the preliminary work of prospecting and surveying had to be done.

That the Academy graduates of this era were men who through force of character and training could assume leadership in the performance of these tasks was due largely to the genius of Colonel Sylvanus Thayer, Superintendent from 1817 to 1833. The "Father of the Military Academy" had one ideal before him: to produce men who would be trained and worthy leaders. He demanded of the cadets excellence of character and excellence of knowledge, the two integrating qualities of such leadership. But he knew that to achieve his ideal he must master and guide the day-to-day routine of the Academy, and so it was that he let no detail of character training or discipline, of curriculum content, of textbooks, of teaching methods, of extracurricular activities, or of physical plant escape his attention.

Thayer grasped at once the need of the country for engineers and, therefore, made courses in civil engineering the core of the curriculum. Under his direction, instruction in that subject eventually included the properties, preparations, and use of materials for construction; the art of construction generally, including decorative architecture; the manner of laying and constructing roads; the construction of

bridges; the principles regulating the removal of obstructions impeding river navigation; the survey, location, and construction of canals and railroads; and the formation of artificial and the improvement of natural harbors.

A list of the Academy's achievements in the field of civil engineering that can be attributed to the farseeing genius of Thayer would include trigonometrical and topographical surveying; methods of triangulation; magnetic declination; and the systems used in locating, surveying, and dividing the public lands of the United States. Francis Wayland, the president of Brown University from 1827 to 1855, said in 1850 in a report to the Corporation of Brown University that West Point graduates did "more to build up the system of internal improvement in the United States than [the graduates of] all other colleges combined."

To provide objective criticism of his work, Thayer had the aid of a Board of Visitors. A regulation for the Government of the Military Academy, approved by Secretary of War William H. Crawford on 1 July 1815, provided for the appointment of such a Board to consist of five "competent gentlemen," with the Superintendent as President, who should attend at each of the annual and semiannual examinations and report thereon to the Secretary. This excellent custom of having a Board of Visitors has lasted to the present day. From the beginning their criticism was pertinent and helpful; nor is this surprising when the long list of those who have been members is scanned, for thereon appear the names of men like Edward Everett, George Bancroft, George Ticknor, Horace Mann, and Daniel Coit Gilman. Thayer knew the value of the intelligent lay point of view and welcomed the Board's comments on his curricular shift to civil engineering, his innovations in educational method, and his system in general.

His innovations in educational methods insured that the cadets not only learned but retained their subjects. Basically, he demanded that the cadets develop habits of mental discipline and maintain standards of scholarship that have grown in importance the more they have been tested through the years. He emphasized habits of regular study, and he laid down the rule that every cadet had to pass every course—any deficiency had to be made up within a specified time or the cadet would be dropped. To carry out these rigorous standards he limited the classroom sections to from 10 to 14 members; he rated these sections in order of merit and directed that cadets be transferred from one to the other as their averages rose or fell.

These methods and standards of Thayer's system are still used at the Academy, and Thayer's insistence on leadership integrated by excellence of character and excellence of knowledge has been the

cornerstone of the Academy's training since his day. Emerson, visiting West Point in 1863, spoke of the "air of probity, of veracity, and of loyalty" the cadets had; and when in 1898 the present coat of arms was adopted, the motto thereon of "Duty, Honor, Country" was but a later generation's attempt to put Thayer's ideal into words.

To the casual student it might seem that until about 1860 West Point was filling the almost dual roles of national military academy and of national school of civil engineering. But despite the curricular emphasis on civil engineering and the renown of her graduates in that field, the Academy never forgot her deepest and most abiding obligation to the Nation: to send forth graduates trained in the art and science of war. That the obligation was fulfilled is attested for these early years by the records of the Mexican and Civil Wars. The record of the Mexican War is told best in the words of Gen. Winfield Scott:

I give it as my fixed opinion, that but for our graduated cadets, the war between the United States and Mexico might, and probably would, have lasted some four or five years, with, in its first half, more defeats than victories falling to our share; whereas, in less than two campaigns we conquered a great country and a peace, without the loss of single battle or skirmish.

The record of the Civil War shows that the Confederacy used graduates whenever and wherever possible; the Union, in the beginning, used "political" generals. Defeat after defeat proved the need for professionally trained officers, and, in the last year of the war, all senior commanders of the Union armies were Academy graduates. Grant, Lee, Sheridan, Jackson, to name but a few on both sides, were all from West Point.

After the Civil War, changing conditions necessitated a shift in the Academy's curriculum away from the emphasis on civil engineering. The first Morrill Land-Grant Act of 1862, granting Federal land to each state "for endowment, support, and maintenance of at least one college where . . . military tactics . . . [and] . . . such branches of learning as are related to agriculture and the mechanic arts [shall be taught], enabled American education to be enormously expanded. New technical and engineering schools, supplementing those that had been founded in the second quarter of the nineteenth century, made it possible for West Point to drop its strong emphasis on engineering subjects. But even had these new schools not come into being, the Academy would have found it impossible to keep on producing both adequately trained Army officers and adequately trained engineers. The tremendous expansion of the body of scientific knowledge during these years—the last half of the nineteenth century—was enforcing specialization in all technical fields. And since the science of war

also expanded greatly it became obvious that the Army officer would need specialization in his particular branch of service.

The Academy met these changed conditions by severing its direct relationship with the Corps of Engineers; from 1866 on it was no longer mandatory that the Superintendent be a member of that Corps. To take care of officer-specialization demand, several Army postgraduate schools were set up, and West Point gradually came to be looked on as only the initial step in the Army officer's education. As the Academy approached its centennial, the military objective of the curriculum came to be the giving of general instructions in the elements of each military branch.

After its centennial in 1902, the Academy underwent a thorough-going structural renovation and became known as the New West Point. Coincident with this reconstruction, Gen. Albert L. Mills, the Superintendent, had the entire curriculum, military and academic, reassessed. As a result, military instruction was transformed from a series of mechanical drills to practical training in minor tactics and field work. Complete correlation was developed between instruction and actual field conditions. One of Mills' special hobbies was English; he believed that the Army officer should be able to express himself clearly in speech and writing. To that end, he strengthened greatly the course in English. A gradual liberalization of the curriculum went on until the outbreak of World War I.

World War I tested and proved, as never before, the soundness of the Academy's curriculum and training. Although in order to meet the sudden and great demand for trained officers the course was shortened and a number of classes graduated early, the qualities and abilities of the graduates remained high.

After the close of the war, the Academy's further development was placed in the hands of General Douglas MacArthur, who became Superintendent on 12 June 1919. General MacArthur's primary concern was an adaption of the curriculum in terms of the recent war. It was known, for instance, that the concept of total war, new in military history, required cadets to have a knowledge of national production, transportation, and social problems; that something of the new developments in weapons and tactics had to be incorporated into cadet instruction; and that shortcomings in the officers' physical development, seen clearly in the stress of battle, made a longer and more vigorous physical training program necessary. But at the same time it was realized that the tremendous advances in the art and science of war, made under the pressure of actual conflict, presaged further development of Army postgraduate schools and hence a

growing emphasis upon a more broadly conceived basic curriculum at West Point. The belief was reached that the Academy would serve best by giving the cadets a combination of general and technical education, in this way providing a solid foundation for a professional military career.

The part of the curriculum General MacArthur changed with the greatest vigor was that relating to physical education. He believed firmly that physical fitness was a basic requirement of an officer, and he planned a strenuous program of compulsory gymnastic instruction complemented by an intramural program of 14 sports in which every cadet had to take part. The wisdom of his foresight has been reflected ever since in the excellent physical condition of all cadets at all times.

Soon after General MacArthur's incumbency the policy of a liberal as well as a technical education got renewed emphasis by the introduction of a course in economics and government under the Professor of English and History. In 1926 the Department of English and History was reorganized into the Department of Economics, Government, and History, and a separate Department of English was established. In succeeding years curricular reforms took place in modern languages, natural philosophy, and mathematics.

All phases of training were greatly intensified during the rearmament years, 1939-41, and the excellence of the curriculum and the methodology of the Academy was clearly demonstrated by the performance of its graduates in World War II.

"But much was learned from World War II and Korea. A series of studies and reviews by distinguished educators and military leaders led to revised concepts of what professional military education should mean. A comprehensive analysis conducted from 1956 to 1960 of the entire curriculum and training program resulted in increased emphasis on modern technological advances and the increasingly complex aspects of national security and international relations. Related courses have been coordinated to bring their direction and emphasis into common focus. Because of the increased technological character of the weapons and techniques of war, the coverage of chemistry, nuclear physics, electronics and basic astronautics has been increased. Similarly, the assignment of officers early in their service to friendly foreign countries in military assistant advisory capacities and the greatly increased participation of officers later in their careers in international and national agencies concerned with national security policies has led to improved coverage of geography, history, government, economics, and ideologies of countries throughout the world. In order to challenge each cadet and to

enable him to proceed as rapidly as his capabilities permit, the number and scope of advanced courses were expanded, and in order to capitalize on the aptitudes and interests of individual cadets, an elective program was introduced." The comprehensive analysis of the curriculum from 1956 to 1960 resulted in two academic programs: the Standard Program and the Advanced Studies Program. The Standard Program is the basic minimum academic course required for graduation and the award of the Bachelor of Science Degree. In the Spring term of 1961, it consisted of a prescribed core curriculum plus two electives which every cadet chose and pursued in his last year. Since the Academic Year 1963-1964, each cadet may choose four electives during his last two years at the Academy. The Advanced Studies Program contains advanced, augmented, and more sophisticated versions of the standard courses, plus additional electives. A cadet can progress to the Advanced Studies Program in two ways: he may be validated for a standard course which he completed at another school prior to entering the Academy and take in lieu thereof a course in the Advanced Studies Program; or he can take, on the basis of demonstrated excellence at the Academy, an advanced or augmented version of a required standard course.

"The academic and military training program is a vital, everchanging one that is continuously examined and adjusted to the changing times, and yet the Academy builds always on the cornerstone of the Thayer system: leadership integrated by excellence of character and excellence of knowledge."

Sylvanus Thayer, Superintendent from 1817 to 1833 and "Father of the Military Academy," was elected to the Hall of Fame for Great Americans, located at New York University, in October 1965. His bust and tablet were unveiled in the auditorium of the Library of New York University on May 15, 1966.

President Johnson signed the bill of March 3, 1964, increasing the maximum authorized strength of the Corps of Cadets from 2529 to 4417. The physical plant of the United States Military Academy is currently expanding and it is expected that both the expansion of the Corps of Cadets and the expansion of the physical plant of the Academy will be completed by 1972.



Battle Monument looking north

Academic Program

MISSION

To provide a broad collegiate education leading to the Bachelor of Science degree.

To build an academic foundation for future graduate study.

To stimulate and challenge intellectual curiosity and individual talents.

To develop powers of analysis, reasoning, and expression.

To contribute to the building of character.

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THE ACADEMIC BOARD

The Academic Board establishes standards and procedures for admission, readmission, advanced placement, validation, academic proficiency, advancement from class to class, graduation, and the granting of diplomas and commissions. The Board recommends separation of cadets for deficiency in academic studies, in conduct, in physical education, and in aptitude for the service. The Board approves courses of instruction, methods of instruction, schedules of instruction, and changes in institutional facilities.

MAJ. GEN. DONALD V. BENNETT,

Superintendent

BRIG. GEN. JOHN R. JANNARONE,

Dean of the Academic Board

BRIG. GEN. BERNARD W. ROGERS,

Commandant of Cadets and Head of the Department of Tactics

COL. GEORGE A. LINCOLN,

Professor and Head, Department of Social Sciences

COL. ELVIN R. HEIBERG,

Professor and Head, Department of Mechanics

COL. JOHN D. BILLINGSLEY,

Professor and Head, Department of Ordnance

COL. CHARLES R. BROSHOUS,

Professor and Head, Department of Earth, Space and Graphic Sciences

COL. WALTER J. RENFROE, JR.,

Professor and Head, Department of Foreign Languages

COL. EDWIN V. SUTHERLAND,

Professor and Head, Department of English

COL. JOHN H. VOEGTLY,

Professor of Military Hygiene

COL. JOHN S. B. DICK,

Professor and Head, Department of Mathematics

COL. FREDERICK C. LOUGH,

Professor and Head, Department of Law

COL. CHARLES H. SCHILLING,

Professor and Head, Department of Military Art and Engineering

COL. ELLIOTT C. CUTLER, JR.,

Professor and Head, Department of Electricity

COL. DONALD G. MAC WILLIAMS,

Professor and Head, Department of Chemistry

COL. EDWARD A. SAUNDERS,

Professor and Head, Department of Physics

MR. JOHN I. WOODRUFF

Secretary of the Board, Director of Admissions and Registrar

GENERAL PROGRAM

Bachelor of Science Program

The academic curriculum, which leads to the degree of Bachelor of Science, contains the essential elements of a broad, general education and major elements of an engineering science program. However, there is a greater emphasis on humanities and social sciences than is typical in engineering science programs. While most of the curriculum is prescribed, each cadet selects at least four elective courses and may receive additional elective opportunities through transfer credit, validation, and overload. The primary purpose of elective courses is to permit each cadet to pursue his interests or aptitudes. He is under no obligation to concentrate his elective selections in a single area, but he may do so by following any of the twenty elective programs. Although majors and minors are not identified as such at USMA, the cadet who follows one of the twenty programs will, in most cases, complete the equivalent of a minor, and in some cases will approach the equivalent of the course work required for a major at many other institutions.

As an integral part of their career development patterns, most graduates pursue programs of graduate study at civilian universities within a few years after graduation from the Military Academy. Therefore, one of the primary aims of the Academy curriculum is to prepare cadets for later admission to graduate schools in fields ranging from science and engineering to social sciences and humanities.

Accreditation

The Military Academy is accredited by the Middle States Association of Colleges and Secondary Schools.

Transfer Credit, Validation, and Advanced Placement

A cadet who has satisfactorily completed college-level work before entering the Academy may receive transfer credit for appropriate standard courses. One who has acquired sufficient knowledge of the subject matter to complete successfully validation examinations administered at the Academy by the departments concerned may receive validation credit for standard courses. In addition, candidates are encouraged to submit for validation consideration College Entrance Examination Board Advanced Placement test results. No reduction in course load is authorized as a result of transfer or validation credit. A cadet who has appreciable prior knowledge of the subject matter although not sufficient for validation, or who demonstrates unusual ability, may be enrolled in an accelerated or advanced course. Advanced and accelerated courses normally cover, in addition to the material included in the corresponding

standard courses, subject matter which is significantly broader or deeper in scope. From the foregoing it should be apparent that there is a great opportunity for advanced study for those candidates who have attended other colleges before entering the Academy. It is important for such a candidate not only to complete the term in which he is enrolled, but also to do as well as possible during the terms he attends college so that he may participate in Advanced and Elective Courses to the maximum extent.

Elective Courses

The standard curriculum provides the opportunity for each cadet to take a minimum of four elective courses. Cadets who receive transfer or validation credit for standard courses will, at some time prior to graduation, take elective courses in lieu of the standard courses. *With approval of the Dean, cadets of the upperclasses may take elective courses in addition to their normal course loads.* The elective courses offered are listed in the following pages.

Honors Courses

For a select few cadets, Honors Courses are offered in the First Class year.

Listing of Courses

Standard, advanced, and elective courses are shown by departments. Courses for the Fourth Class are numbered in the 100's; courses for the Third Class in the 200's; courses for the Second Class in the 300's; and courses for the First Class in the 400's. Accelerated, advanced, and elective courses are indicated by the second digit; 4, 5, and 8, respectively. For standard and advanced courses the third digit indicates the term in which the course is offered; odd digit for first term, even digit for second term. Elective courses may be offered in either or both terms as indicated in the course description. A credit hour represents one hour of classroom instruction per week for an eighteen-week term.

Methods of Instruction

Cadets attend classes in small sections of from 12 to 15 students, so that emphasis may be placed on daily student participation. Cadets are normally assigned to sections on the basis of their demonstrated ability in each subject. The resulting homogenous grouping enables the instructor to pace his teaching to the capability of the student. Thus the cadet is intellectually challenged and a maximum of learning can take place at all levels. Cadets are resectioned periodically. Weekly posting of grades contributes much to the development of a competitive spirit in academics among cadets. Reports of each cadet's academic progress are provided to parents twice each term.

ACADEMIC CURRICULUM

STANDARD, ACCELERATED AND ADVANCED COURSES

AY 1968-1969

FOURTH CLASS YEAR

First Term

EF 101 or EF 151
 EV 101 or EV 151 or EV 153
 EN 101 or EN 151
 L—101, L—141, or L—151
 MA 101 or Advanced
 Program I, II, or III

Second Term

EF 102 or EF 152
 EV 102 or EV 152 or EV 154
 EN 102 or EN 152
 L—102, L—142, or L—152
 MA 102 or Advanced
 Program I, II, or III

THIRD CLASS YEAR

EN 201
 L—201, L—241, or L—251
 MA 201 or Advanced
 Program I, II, or III*
 PH 201 or PH 251
 CH 201 or CH 251
 SS 201

PL 202 or PL 252
 L—202, L—242, L—252
 MA 202 and 204 or Advanced
 Program III*
 PH 202 or PH 252
 CH 202 or CH 252
 SS 202

SECOND CLASS YEAR

EL 301
 LW 301
 ME 301 or ME 351
 ME 303 or ME 353
 SS 301
 Elective

EL 304
 LW 302
 ME 302 or ME 352
 PH 303 or PH 353
 SS 302
 Elective

FIRST CLASS YEAR

PL 401
 CE 401, CE 451, or CE 453
 HM 401
 OE 401 or OE 451
 SS 401 or SS 451
 Elective

EN 402
 CE 402, CE 452, or CE 454
 HM 402
 OE 402 or OE 452
 SS 407
 Elective

*Cadets who completed the first year of Mathematics Advanced Program III may elect to take courses in subjects other than Mathematics.

ELECTIVE PROGRAMS

Twenty elective programs are presented to assist those cadets who have a definite interest in one of the subject areas. Cadets interested in one of the programs may select four or more elective courses from that program.

Chemistry

Civil Engineering

Economics

Electrical Engineering

Engineering Science

Foreign Language, French

Foreign Language, German

Foreign Language, Portuguese

Foreign Language, Russian

Foreign Language, Spanish

History

International Affairs Literature

Management-Science

Mathematics

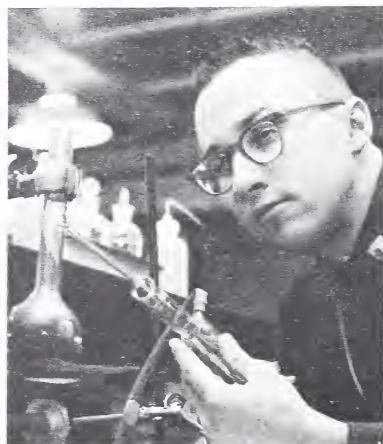
Military Studies

Nuclear Engineering

Physics

Political Science

Weapons Systems, Engineering



ELECTIVE COURSES

BASIC SCIENCES

CH 383	Organic Chemistry I
CH 384	Organic Chemistry II
CH 481	Physical Chemistry I
CH 482	Physical Chemistry II
CH 485	Human Biology I
CH 486	Human Biology II
CH 489	Chemistry Research Project
MA 481	Linear Programming
MA 482	Abstract Algebra
MA 483	Advanced Calculus I
MA 484	Differential Equations (Intermediate)
MA 485	Advanced Calculus II (Complex Variable)
MA 486	Numerical Analysis with Digital Computation
MA 487	Real Variable Theory
PH 383	Introduction to Theoretical Physics I
PH 384	Introduction to Theoretical Physics II
PH 484	Quantum Mechanics
PH 486	Experimental Physics
PH 488	Nuclear Physics
PH 489	Special Topics in Physics

NATIONAL SECURITY & PUBLIC AFFAIRS

EV 381	Geography of the USSR
EV 384	Regional Geography of the U.S.
LW 481	International Law
HM 381	Revolutionary Warfare
HM 481	Evolution of Modern Warfare
HM 484	Twentieth Century Warfare
SS 381	History of Russia
SS 382	History of U.S. Foreign Relations
SS 383	Middle Eastern Studies
SS 384	Latin American Studies
SS 385	Comparative Economic Systems
SS 386	Political Philosophy
SS 387	Seminar in Public Policy
SS 481	Seminar in History
SS 482	Economics of Defense Management
SS 483	National Security Seminar
SS 485	Problems of the Developing Nations
SS 487	Seminar in Public Policy (Honors—Research)
PL 481	Managerial Psychology
PL 482	Sociology: Society and Culture
PL 484	American Military Institutions and Manpower
PL 485	Independent Behavioral Science Research

APPLIED SCIENCE AND ENGINEERING

CE 381	Soil Mechanics
CE 481	Design of Concrete Structures
CE 482	Advanced Structural Analysis
CE 484	Individual Engineering Project
EF 382	Computer Science Fundamentals
EF 384	Principles of Surveying
EV 383	Space Sciences
EL 382	Electromechanical Energy Conversion
EL 383	Electromagnetic Fields and Advanced Circuits
EL 481	Electronic Circuits
EL 483	Digital Computers

APPLIED SCIENCE AND ENGINEERING

EL 484	Information Transmission
EL 486	Solid State Electronics
EL 487	Automatic Control Systems
ME 384	Mechanics of Materials
ME 481	Gas Dynamics
ME 482	Heat, Mass and Momentum Transfer
ME 483	Space Mechanics
ME 485	Continuum Mechanics
ME 486	Mechanical Vibrations
OE 385	Management Engineering
OE 481	Automotive Engineering
OE 482	Individual Ordnance Project
OE 483	Engineering Materials
OE 487	Operations Research
PH 487	Nuclear Reactor Theory

LANGUAGE AND LITERATURE

EN 381	Introduction to Music
EN 382	Introduction to Fine Arts
EN 481	The Novel
EN 482	Shakespeare
EN 483	Contemporary Literature
EN 484	American Literature of the 19th Century
EN 485	English Literature from the Beginning to 1660
EN 486	English Literature from 1660 to the Present
EN 487	Expositors of 18th and 19th Century American Thought
EN 488	Modern American Criticism: 20th Century Attitudes Reflected in American Prose
LC 381	Chinese Language through Readings in History and Civilization
LC 382	Military Readings in Chinese
LF 381	French Language through Literature
LF 382	Military and Scientific Readings in French
LF 483	Civilization and Literature of France
LF 484	Contemporary France
LF 485	Survey of French Literature
LF 486	Modern French Literature
LF 487	Directed Studies in French
LF 488	Directed Studies in French
LG 381	German Language through Literature
LG 382	Military and Scientific Readings in German
LG 483	History of German Civilization
LG 484	Contemporary Germany
LG 485	Survey of German Literature
LG 486	Modern German Literature
LG 487	Directed Studies in German
LG 488	Directed Studies in German
LP 381	Portuguese Language through Literature
LP 382	Survey of Brazilian Literature
LP 485	Directed Studies in Portuguese
LP 486	Directed Studies in Portuguese
LR 381	Russian Language through Literature
LR 382	Russian Language through Literature
LR 483	Military and Scientific Readings in Russian
LR 484	Russian Civilization
LS 381	Spanish Language through Literature
LS 382	Spanish Language through Literature
LS 483	Survey of Spanish-American Literature
LS 484	Modern Spanish-American Literature
LS 485	Survey of Spanish Literature
LS 486	Modern Spanish Literature

THE EDUCATIONAL PHILOSOPHY OF THE UNITED STATES MILITARY ACADEMY

The United States Military Academy prepares selected young men for service to their country as professional officers of the United States Army. Since it is the only institution of higher learning with this specific mission, its philosophy of education is unique. The Military Academy must produce enlightened military leaders of strong moral fiber whose minds are creative, critical, and resourceful. The academic curriculum and military training encourage logical analysis, clear and concise expression of considered views, and independent thought and action along with a readiness, developed within the framework of military discipline, to carry out orders without reservation once a decision has been reached.

The total curriculum is designed to develop those qualities of character, intellect, and physical competence needed by the officer who is prepared to lead the smallest combat unit or to advise the highest governmental council. The program includes the sciences, the humanities, and military and physical training. It forms a basis both for graduate education and for further professional development.

In the academic curriculum, standard courses provide the essential core of knowledge of mathematics, science, engineering, the social sciences and the humanities and an understanding of the application of this knowledge to the solution of problems. Advanced and elective courses afford the opportunity to develop intellectual capacities and to concentrate in areas of particular interest.

Military training provides the requisite knowledge of professional fundamentals and doctrine and of the basic military skills. Service in positions of responsibility in the Corps of Cadets and participation in intensive summer training provide the opportunity to apply and test principles and to learn techniques by practice and observation.

Fitness for military leadership requires physical strength, agility, stamina, and a competitive spirit. These are acquired from a comprehensive course in physical education and from participation in intramural and intercollegiate sports.

The increasing complexity of the world scene requires constant adaptation by the military profession and by the institutions which prepare its leaders. But while adapting itself to the changing world, the Academy must continue to emphasize the devotion to Duty, Honor, and Country which has traditionally been the hallmark of its graduates.

THE ACADEMIC DEPARTMENTS

Office of the Dean

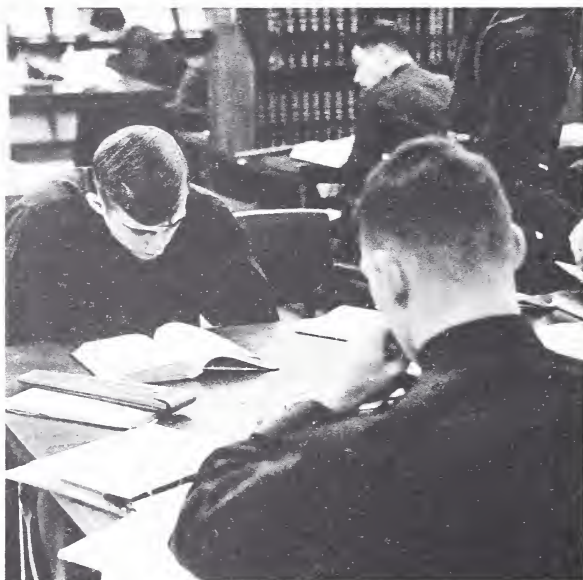
Dean of the Academic Board: Brig. Gen. John R. Jannarone

Associate Dean: LTC Manley E. Rogers

Operations Division: LTC John W. Mastin, MAJs Walter W. Kastemayer, Jr., Frederick J. McConville, Bruce C. Johnson, Lewis C. Ranch

Educational Research and Analysis Division: MAJs Robert W. Giuliano, William B. Streett, Jr.

Educational Resources and Technology Division: LTCs William F. Luebbert, Frank B. Tennant, Jr., MAJs John R. Parker, Robert A. Leach, CPTs James R. Hannigan, Edward G. Preston, Leo J. Mansi, 1LT Stephen B. Fischer



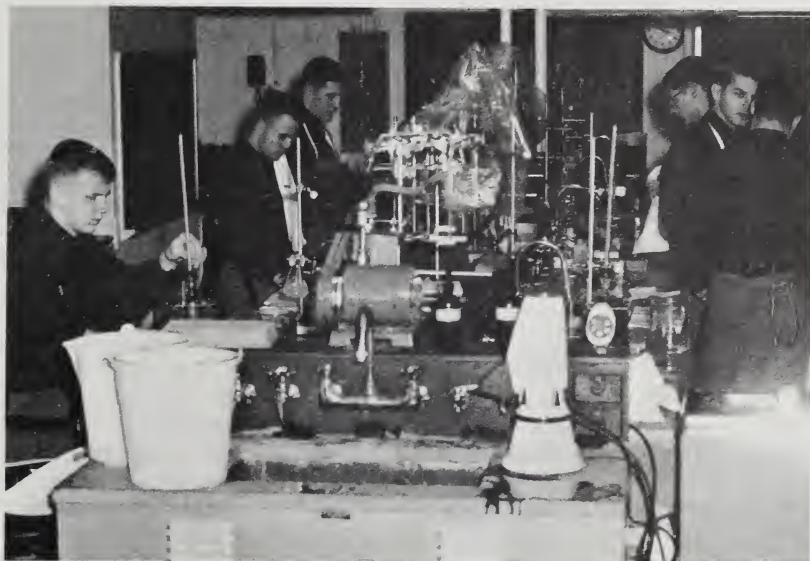
DEPARTMENT OF CHEMISTRY

Professor: COL D. G. MacWILLIAMS (Head of Department)

Associate Professors: LTC W. J. Hoff, Jr., MAJ G. W. Chancellor

Assistant Professors: MAJs. J. F. Calvert, E. J. Downing, L. H. Hunt, R. D. Kittelson,
L. R. Martin, M. L. Miller, R. H. Miller

Instructors: MAJs R. C. Baldwin, J. L. E. Hill, G. R. Jilbert, K. I. Kawano, J. H.
Ramsden, R. G. Rose, K. R. Simila, J. C. Wilkinson; LT O. L. Carter



Chemistry Laboratory

Standard Course

CH 201-202. GENERAL CHEMISTRY

Prerequisite: None.

A two-semester course in general college chemistry with particular emphasis on the fundamental concepts, principles, theories and laws of chemistry, to include an introduction to organic chemistry and nuclear chemistry. Integrated laboratory program includes practical exercises illustrating fundamental chemical theory discussed in the classroom and an introduction to qualitative analysis. Experiments stress investigative techniques, observation and interpretation of data, and the drawing of conclusions from these data. *8 Credit Hours (4 each term).*

Advanced Course

CH 251-252. ADVANCED GENERAL CHEMISTRY WITH ANALYSIS

Prerequisite: None.

A rigorous treatment of the fundamental principles of modern chemistry. Topics covered include elementary quantum theory, atomic structure, the chemical bond,

gases, crystal structure, solutions, elementary thermodynamics, kinetics, equilibrium, descriptive chemistry of the elements, electrochemistry complex ions, elements of organic and nuclear chemistry. Integrated laboratory program includes experiments of a quantitative nature which illustrate the fundamental concepts of chemistry and a series of semi-micro qualitative analysis exercises stressing equilibrium principles and solution chemistry of various elements. *8 Credit Hours (4 each term)*.

Electives

CH 383-384. ORGANIC CHEMISTRY

Prerequisite: CH 202 or CH 252, or validation thereof.

A comprehensive study of the nature, preparation and reactions of the compounds of carbon. The latest theories of chemical bonding are presented. Emphasis is placed on the relationship of structure to chemical reactivity. The course includes such standard topics in organic chemistry as: aliphatic and aromatic hydrocarbons, alcohols, halides, aldehydes, ketones, acids and their functional derivatives, amines, stereochemistry, reaction mechanisms and synthesis. The laboratory program includes the application of modern instrumentation, the typical reactions of functional groups, synthesis, and an introduction to qualitative analysis. *8 Credit Hours (4 each term)*.

CH 481-482. PHYSICAL CHEMISTRY

Prerequisite: CH 202 or CH 252, or validation thereof.

A course relating certain theoretical aspects to the laws of chemical interaction. The coverage includes such standard topics in physical chemistry as: description of physiochemical systems, chemical thermodynamics, solutions and phase equilibrium, kinetics, changes of state, the phase rule, conductance and ionic equilibria, electrochemistry, quantum chemistry, and spectroscopy. The laboratory program includes experiments which illustrate the fundamental topics through precision measurements, including the application of ultraviolet, visible and infrared spectrophotometry. Extensive use of the digital computer for automatic data reduction and error analysis is also made for the laboratories. *5 Credit Hours (2.5 each term)*.

CH 485-486. HUMAN BIOLOGY

Prerequisite: CH 202 or CH 252, PH 202 or PH 252, or validation thereof.

A course which develops the fundamental principles of human structure and function. With primary emphasis on physiology, it includes sufficient elements of cell morphology and functions, and human anatomy, to preclude the necessity of prior formal training in the biological sciences. Student background in physics and chemistry will be utilized to support the inclusion of elements of biochemistry and biophysics and a more advanced approach than is typical of an introductory course in biology. Experimental support will be accomplished by the use of audio-visual aids and simple classroom demonstrations. *5 Credit Hours (2.5 each term)*.

CH 489. CHEMISTRY RESEARCH PROJECT (Either Term)

Prerequisites: CH 384 and CH 482.

Individually supervised research in a selected problem area. Research projects are approved by the Department and require the cadet to outline his approach, determine necessary laboratory equipment and evolve the techniques and procedures required. The project is completed by the writing of a research paper. *2.5 Credit Hours*.

DEPARTMENT OF EARTH, SPACE AND GRAPHIC SCIENCES

Professors: COL C. R. Broshous (Head of Department), LTC G. W. Kirby, Jr.

Associate Professors: LTCs A. C. Biggerstaff, J. E. Fox, W. B. Rogers, W. C. Smith

Assistant Professors: LTCs K. R. Ebner, A. L. Erickson, J. B. Garver, M. E. Kallman; MAJs J. M. Davis, Jr., G. Z. Demers, T. P. Graham, L. R. Hayden, Jr., H. J. Hubbard, III, D. A. Hufnagel, J. R. Jenkins, J. H. Jones, R. E. Littlefield, T. F. Plummer, Jr., D. W. Reeves, R. L. Reynard, L. B. Rodenberg, Jr., L. G. Smith, M. D. Schoonmaker, J. E. Sobraske, R. L. Stone, G. D. Tebben, N. S. Williamson, III, E. K. Wintz

Instructors: LTC R. E. Wallace; MAJs L. Allen, A. G. Boivin, J. B. Cooper, L. D. Hammond, J. R. Harrell, W. V. Harris, Jr., L. K. Moraski, A. G. Pokorny, Jr., G. B. Rogers, Jr., C. C. Thudium, Jr., D. I. Walter; LT P. L. Justice

Standard Courses

EF 101-102. ENGINEERING FUNDAMENTALS

Introduction to the Digital Computer. Programming for and operation of the General Electric 225 Digital Computer utilizing a pseudo-machine language and FORTRAN II.

Graphical Techniques. Signal-stroke gothic lettering, technical sketching, use of the drawing instruments, and a brief introduction to graphs, diagrams, and graphic training aids.

Graphical Representation. The theory of projection, orthographic, isometric, oblique, and perspective projection; the spatial relationship of points, lines and planes, and working drawings. Includes a brief introduction to basic mechanical elements, conventions, basic dimensioning, and limit dimensions followed by a simple design project.

Graphical Calculations. Basic principles of vector geometry, nomography, and graphical calculus with limited applications.

Earth Measurements. A brief familiarization with the measurement of horizontal and vertical distances and horizontal and vertical angles at or near the surface of the earth, the instruments used and the need for accurately determining these measurements. 5 Credit Hours.

EV 101-102. ENVIRONMENT

Physical Geography. Descriptive study of a number of earth sciences which gives a general insight into the nature of man's environment and provides a sound physical basis for later work in world geography. Included are introductions to geomorphology, geology, hydrology, meteorology, climatology, pedology and physical oceanography. Map studies are emphasized throughout.

World Geography. The study of man and of his varying economic and social activities. The course initially stresses basic concepts of geography and geographic analysis. It then examines major geographic regions of the world emphasizing the different ways that man makes use of his physical habitat depending upon his culture and his economic and technological capabilities.

Astronomy-Astronautics. Emphasis is placed on the physical characteristics of the bodies in the solar system and the nature of their relative motions. Included as the basis for this investigation are the elements of electromagnetic radiation and celestial mechanics. A study of the physical characteristics and motions

of stars constitutes the primary line of investigation beyond the solar system. Astronautics is incorporated into the course with a brief study of current United States' space programs. *5 Credit Hours.*

Advanced Courses

EF 151-152. ADVANCED ENGINEERING FUNDAMENTALS

Prerequisite: One year of engineering graphics in a recognized engineering college or equivalent, and demonstration of a satisfactory degree of proficiency in engineering graphics by passing a special validation examination. Offered in lieu of Engineering Fundamentals 101-102.

Advanced Engineering Fundamentals is a rigorous course going beyond the usual freshman level to consider in depth descriptive geometry, vector geometry, graphical calculus, and nomography. Brief introductions to graphical arithmetic and algebra, empirical equations, and harmonics and Fourier Series are included. A team project in which a practical engineering problem is investigated and graphical solutions presented, concludes the graphics portion of the course. Basic programming for the GE 225 Digital Computer and earth measurements receive a coverage comparable with EF 101-102. *5 Credit Hours.*

EV 151-152. ADVANCED ENVIRONMENT

Prerequisite: A strong high school or college record of World Geography and satisfactory performance on a validating examination in World Geography.

Physical Geography. (Same as for EV 101-102.)

Astronomy-Astronautics. (Same as for EV 101-102.)

Geography of the USSR. This course seeks to provide the student with an understanding of the distribution of the physical, cultural and economic elements of the USSR. The physical aspects, i.e., the landforms, mountain systems, drainage patterns and climate, are first studied. Cultural geography, the peoples and nationalities of the Soviet Union, is then surveyed. Economic geography follows with a survey of agriculture, national resources and industrial development. Finally, a survey of each of the major geographic regions is made. *5 Credit Hours.*

EV 153-154 ADVANCED ENVIRONMENT

Prerequisite: A strong high school or college record of World Geography and satisfactory performance on a validating examination in World Geography.

Physical Geography. (Same as for EV 101-102.)

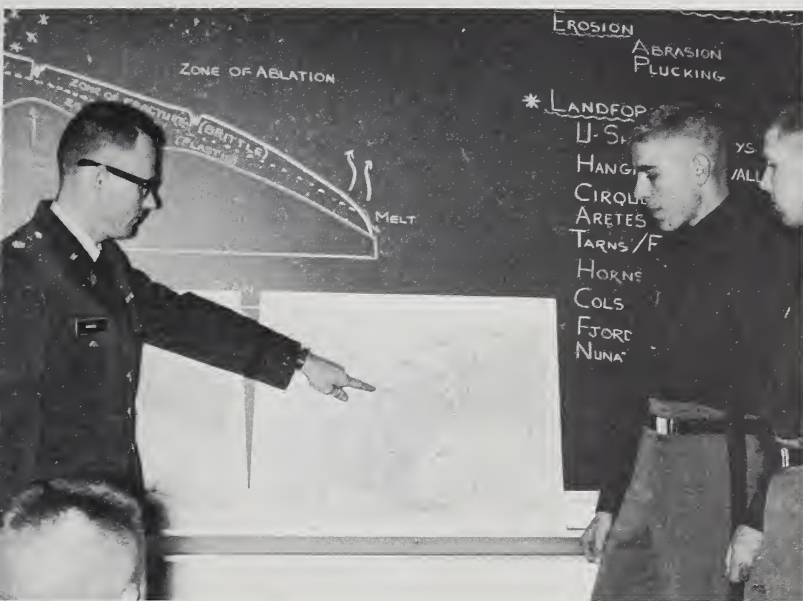
Astronomy-Astronautics. (Same as for EV 101-102.)

Geography of Latin America. This course is designed to familiarize the cadet with the geography of Latin America. The initial lessons are concerned with the physical features of the topography to include landforms, climate, vegetation soils, and drainage patterns. The culture of each Latin American country is then examined within this physical framework in an effort to better understand the contemporary activities and problems. *5 Credit Hours.*

Elective Courses

EF 382. COMPUTER SCIENCE FUNDAMENTALS (Either Term)

Prerequisites: Open to all 1st and 2d Classmen and to 3d Classmen who stand in the top $\frac{1}{3}$ in Math.



Physical Geography—Land Forms

This course provides the cadet who already possesses a minimum basic familiarity with the use of digital computers a comprehensive introduction to the computer science field. Special attention is directed to military and business-oriented computer applications, math-science-engineering computer applications, systems analysis techniques, computer aided decision making and data processing methods. *2.5 Credit Hours.*

EF 384. PRINCIPLES OF SURVEYING (Second Term)

Prerequisite: EF 101-102 (or 151-152.)

This course provides a foundation in the principles of surveying in sufficient depth to permit application to military mapping, construction surveying, artillery firing, optical tooling, and forms a basis for further study in related engineering fields. Course includes a familiarization with the instruments and equipment used in modern civil and military surveying and the theoretical concepts of measurements, probability, and errors, celestial observations, tachymetry, and photogrammetry. *2.5 Credit Hours.*

EV 381. GEOGRAPHY OF THE USSR (First Term)

Prerequisites: Open to all cadets who have completed EV 101-102.

This course covers the demographic, physiographic, climatic, agricultural, industrial, transportation, and mineral resource patterns of the USSR. Geographic factors—cultural, economics, and physical—are related to the human activity in agriculture and industry. The knowledge gained by the cadet will contribute to the foundation required for assessing USSR capabilities. *2.5 Credit Hours.*

EV 383. SPACE SCIENCE (First Term)

Prerequisites: 1st or 2d Classmen in upper two-thirds of class in third class mathematics and physics. Open to other cadets with consent of instructor.

This course includes familiarization with geophysics and astrophysics, a detailed examination of the solar system, and an examination of selected topics related to the study of the universe as a whole. It is both descriptive and analytical. Physics and calculus are used whenever they can effectively contribute to a better understanding of the lesson objective. *2.5 Credit Hours.*

EV 384. REGIONAL GEOGRAPHY OF THE UNITED STATES (Second Term)

Prerequisite: EV 101-102.

Regional analysis of the major economic subdivisions of the United States. Study of how demographic physiographic, climatic, resource, and cultural factors have contributed to existing industrial, agricultural and transportation patterns. The understanding thus gained of the industrial, agricultural and resource bases of our nation will serve the cadet as a standard of comparison in the analysis of any other nation or region of the world. *2.5 Credit Hours.*



DEPARTMENT OF ELECTRICITY

Professor: COL E. C. Cutler, Jr. (Head of Department).

Associate Professors: LTCs S. E. Reinhart, Jr., R. B. Andreen.

Assistant Professors: MAJs D. K. Blackham, T. E. Olson, J. J. P. Meehan, W. I. Brownfield.

Instructors: LTC H. G. Graham, MAJs M. L. Moore, N. B. Penrose, B. M. Carr, C. J. Zabriskie, J. F. Campbell, CPTs J. R. Berti, C. E. Endy, Jr., D. E. Herman, Jr., R. L. Leech, J. L. Geisinger, A. J. Downey, Jr.

Standard Courses

EL 301. ELECTRIC CIRCUITS (First Term)

Prerequisite: PH 202 and MA 202.

Charge, current, and voltage; Kirchhoff's Laws; complex phasor representation; sources, waveforms, and instruments; power; resistance; resistive networks and theorems; inductance and capacitance; natural and total response; reactance and impedance; resonance; AC network analysis; coupled circuits magnetic circuits and transformers laboratory work. *4 Credit Hours.*

EL 304. ELECTRONICS (Second Term)

Prerequisite: EL 301.

Concepts of electronic systems; signal representation; electronic circuit representation; analysis of tank circuits, piezoelectric crystals, and Butterworth filters; simple telephone systems; diode electronics; linear and nonlinear diode circuits; triode and transistor electronics, parameters, and graphical analysis; equivalent circuits; amplifiers; coupling, gain, and frequency response; feedback amplifiers; oscillators; modulation and detection; radio waves and antennas; transmitters and receivers; laboratory work. *4 Credit Hours.*

Elective Courses

EL 382. ELECTROMECHANICAL ENERGY CONVERSION (Second Term)

Prerequisite: EL 301.

Basic principle of electromechanical energy conversion; review of magnetic circuits; principle of virtual work and its application to rotating and translating devices; dc generators and motors; alternators; synchronous motors; induction motors; the general machine; constraints for ac and dc machines; the reluctance motor; the metadyne; introduction to feedback control systems; use of the LaPlace transform; laboratory work. *4 Credit Hours.*

EL 383. ELECTROMAGNETIC FIELDS AND ADVANCED CIRCUITS (First Term)

Prerequisites: PH 202 and MA 202.

Vector analysis; gradient, divergence, and curl; static electric and magnetic fields; Maxwell's hypothesis and equations; plane waves, reflection, and refraction; radiation and antennas; waveguides, ionospheric propagation and radar; laboratory work.

Signal representation in electrical and electronic systems; LaPlace transform; singularity functions; superposition and convolution; introduction to Fourier Series and transforms; frequency analysis and Bode diagrams; tank circuits and filters; coupled circuits; laboratory work. *4 Credit Hours.*

EL 481. ELECTRONIC CIRCUITS (First Term)

Prerequisite: EL 304.

Transistor circuits; biasing and stabilization; multielectrode tubes and semi-conductors; LaPlace transform; response of amplifiers; coupling; compensation inductive coupling and tuning; classification of amplifiers; thermal conduction and runaway; complementary symmetry; feedback; oscillators; switches. *2.5 Credit Hours.*

EL 483. DIGITAL COMPUTERS (First Term)

Prerequisite: EL 304.

Capabilities and limitations of digital computers; organization and operation; electrical construction; system design, planning, and applications. Extensive laboratory work including investigation of computer electronic circuits, and assembly of a portion of a specimen computer. Practical work on an actual digital computer involving operating techniques and programming methods. *2.5 Credit Hours.*

EL 484. INFORMATION TRANSMISSION (Second Term)

Prerequisite: EL 304.

Basic concepts of random time functions; frequency and time domains, types of modulation, random signal theory; applications of probability theory and statistical inference; network analysis, elements of information theory; noise sources and noise figure; signal-to-noise ratio; applications to communications and radar systems. *2.5 Credit Hours.*

EL 486. SOLID-STATE ELECTRONICS (Second Term)

Prerequisites: EL 304, and PH 303.

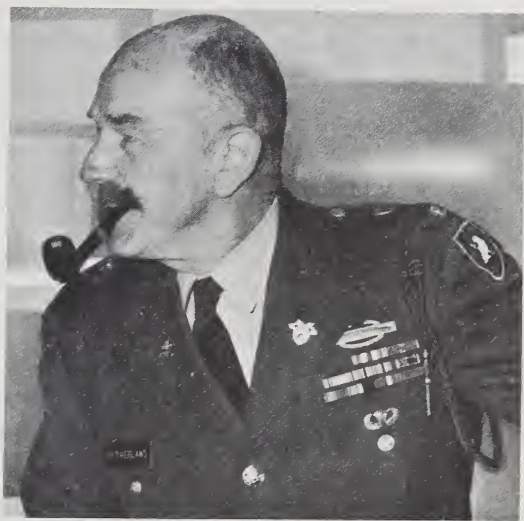
Band structure of semiconductors; density of states; Fermi level; mobility, lifetime, recombination, and trapping; diffusion and drift; space charge; high-field effects; optical behavior; surface properties and thin films; single-junction devices, including rectifiers, avalanche diodes, field-effect transistors, tunnel diodes, and photodiodes; transistors and multiple-junction devices; fabrication techniques; thin-film networks; integrated solid-state circuits. Laboratory work. *2.5 Credit Hours.*

EL 486. AUTOMATIC CONTROL SYSTEMS (First Term)

Prerequisite: EL 382.

The composition of linear servomechanisms; transfer functions; block diagrams; time and frequency domains; dynamic analysis of systems; Routh-Hurwitz criteria; Nyquist and Bode diagrams; Nichols charts; root-locus plots; performance criteria; steady-state errors; stability; stabilization and compensation. Laboratory work. *2.5 Credit Hours.*





DEPARTMENT OF ENGLISH

Professors: COL E. V. Sutherland (Head of Department), LTC J. L. Capps.

Associate Professors: LTCs D. C. Ahearn, C. R. Kemble, N. A. Spiro, J. W. Wensyel
MAJ G. A. Bailey.

Assistant Professors: MAJs H. B. Bynell, W. E. Haas, P. G. Jones, W. S. May,
T. J. McAniff, J. T. Murchison, L. A. Spurlock.

Instructors: LTC W. L. McMahon; MAJs B. A. Arthur, B. B. Beasley, J. H. Coreth,
S. J. Delikat, F. M. Franks, Jr., T. P. Garigan, H. H. Jordan, D. P. McLain,
M. L. Plassmeyer, W. L. Prichard, Jr., T. W. Simroe, Jr., F. R. Stevens, Jr.,
P. L. Stromberg, C. W. Sullinger, A. A. Vardamis, D. R. Williams; CPTs F. J.
Calverase, W. R. Good, J. H. Hafner, R. E. Winters; LTs W. W. Morgan,
R. B. Schwartz.

Standard Courses

EN 101-102. COMMUNICATION SKILLS, LOGIC AND ENGLISH EXPOSITION

A standard first year course in effective communication. It consists of instruction in the logic and mechanics of expository expression and includes the critical evaluation of cadet writing and speech-making. During the course, the cadets are introduced to the principles of research and the forms of literature. *5 Credit Hours (2.5 each term).*

EN 201. COMPARATIVE LITERATURE

This course is a study of selected works of world literature. The cadet considers the Bible, Homer, Sophocles, Chaucer, Shakespeare, Milton, Goethe, Conrad, and several English poets. Primary emphasis is given to man's relationships with Nature, God, and fellow man. The cadet develops the ability to speak effectively through

participation in classroom discussions of reading assignments; he improves his writing through preparation of formal compositions, including a research paper and three themes. *2.5 Credit Hours.*

EN 202. COMPARATIVE LITERATURE

This course, the same as EN 201, is offered during the second semester to qualified Fourth Classmen. *2.5 Credit Hours.*

EN 402. LITERATURE AND ADVANCED EXPOSITION

This course is based upon readings in exposition, drama, and the novel, and requires advanced expository writing. The objectives are (1) to develop further the student's ability to write and speak effectively, and (2) to improve his skill in logical analysis and criticism. *2.5 Credit Hours.*

Advanced Courses

EN 151. THE EVOLUTION OF AMERICAN IDEALS AS REFLECTED IN AMERICAN LITERATURE, 1607-1860.

The course is a study of relationships between American literature and the development of our national character. Among the writers studied are Taylor, Edwards, Franklin, Jefferson, Emerson, Thoreau, Hawthorne, Melville, and Poe. *2.5 Credit Hours.*

EN 152. THE EVOLUTION OF AMERICAN IDEALS AS REFLECTED IN AMERICAN LITERATURE, 1860-PRESENT

This course is a continuation of EN 151. Among the writers studied are Whitman, Lincoln, Howells, James, Clemens, Crane, Benét, Frost, Eliot, O'Neill, Hemingway and Faulkner. *2.5 Credit Hours.*

Elective Courses

EN 381. INTRODUCTION TO MUSIC

Not a history of music, per se, this is a practical introduction upon which the cadet can expand his appreciation according to his own interests and talents. Elements of music, the creative process, musical texture and structure will be discussed.



Representative composers and composition from the sixteenth to twentieth centuries will be featured.

EN 382. INTRODUCTION TO FINE ARTS

This is a survey course designed to acquaint the cadet with dominant themes in the arts from primitive cultures through the mid-20th century. Representative artists and architects will visit to display work and discuss ideas. The course will consider both European and Oriental art and will promote familiarity with medium, technique and message.

EN 481. THE NOVEL (First Term)

This course is a study of the development of the novel as a mode of literary expression. Approximately ten representative novels of America and Europe will be read. *2.5 Credit Hours.*

EN 482. SHAKESPEARE (Second Term)

This course is a study of selected plays and poems from Shakespeare. *2.5 Credit Hours.*

EN 483. CONTEMPORARY LITERATURE (First Term)

This course examines man as he has come to view himself in the nineteenth and twentieth centuries, through readings of major American and European writers after 1900. Included are Hardy, Dickinson, Yeats, Ibsen, Auden, Frost, Eliot, and others. *2.5 Credit Hours.*

EN 484. AMERICAN LITERATURE OF THE NINETEENTH CENTURY (Second Term)

This course examines the works of nine major nineteenth-century American authors: Emerson, Thoreau, Hawthorne, Melville, Poe, Mark Twain, Whitman, Dickinson, and James. *2.5 Credit Hours.*

EN 485. ENGLISH LITERATURE FROM THE BEGINNING TO 1660 (First Term)

This course consists of a study of representative authors and trends from Old and Middle English to the Restoration. *2.5 Credit Hours.*

EN 486. ENGLISH LITERATURE FROM 1600 TO THE PRESENT (Second Term)

This course is a study of representative authors and trends in English literature from the Restoration to 1900. *2.5 Credit Hours.*

EN 487. EXPOSITORS OF 18TH AND 19TH CENTURY AMERICAN THOUGHT (First Term)

This course is a study in depth of the prose writings of prominent Americans, each of whom profoundly influenced more than one field of thought. Individuals studied include Franklin, Channing, Jefferson, Emerson, Cooper, Bancroft, W. G. Sumner, William James, *et al.* *2.5 Credit Hours.*

EN 488. MODERN AMERICAN CRITICISM (Second Term)

This course consists of an evaluation of the twentieth century American cultural temper emphasizing relationships in the social, literary, artistic, and political criticism between 1900 and World War II. *2.5 Credit Hours.*



DEPARTMENT OF FOREIGN LANGUAGES

Professors: COL W. J. Renfroe, Jr. (Head of Department), COL S. Willard.

Associate Professors: LTCs D. T. Dunne, H. Reiner; Dr. F. Tiller.

Assistant Professors: LTCs E. F. Crowley, E. P. Freedman, J. F. Hook, J. Knight, J. T. Rears, J. R. Ross, T. J. Stacy, R. D. Vanderslice; MAJs R. E. Bell, W. C. Buell, W. F. Dunkelberger, E. F. Grubbs, Jr., O. A. Jambon, B. Loeffke, D. A. McNerney, P. S. Meckel, C. A. Olsen, J. F. Santilli, Jr., E. J. Shimek II, E. S. Tyler; CPT J. W. Fisher; Messrs. F. C. H. Garcia, N. Maltzoff, S. G. Saldívar, C. Viollet.

Instructors: LCT G. W. Gallant; MAJs J. E. Bohman, W. P. Clary, L. V. Hightower, III, R. R. Moore 3d, J. O. Neal, Jr., K. J. O'Neill, D. B. Pruitt, J. B. Sampson, P. B. Schmidt, M. L. Thomas, J. C. Toole, F. L. Wilmoth; CPTs J. F. Lynch, R. J. Schiemann, L. G. White; Mr. J. Chang.

Foreign Instructors: LTC W. Cremer (German Army), MAJ S. Alvarez (Mexican Army), MAJ A. J. Lima-Câmara (Brazilian Army).

Executive Officer: LTC E. F. Crowley.

NOTE: Each cadet studies one foreign language—Chinese, French, German, Portuguese, Russian, or Spanish—during his first two years at West Point. The approximate percentage of the entering class to be assigned to each language is fixed by the Department of the Army. Within these quotas cadets are assigned according to their preferences and previous foreign language experience. In general, a cadet is encouraged to continue at West Point the study of a language begun elsewhere. Advanced courses in French, German, Russian and Spanish are offered cadets who wish to continue the study of those languages and who demonstrate their proficiency in oral and written tests given shortly after their arrival at West Point. A few highly qualified cadets are validated for one or two years of language study. Cadets may also take up to four additional semesters of foreign language study by pursuing elective courses in their third and fourth years.

Standard Courses

LC 101-102. CHINESE

LF 101-102. FRENCH

LG 101-102. GERMAN

LP 101-102. PORTUGUESE

LR 101-102. RUSSIAN

LS 101-102. SPANISH

Basic course in the language. In keeping with the primary objectives of speaking and understanding, oral work is stressed. Audio-lingual skills are developed by reading aloud, repetition drills, question and answer exercises, prepared and extemporaneous dialogues, individual short talks, and frequent use of the language laboratory. After the first month of the course, all classroom work is normally in the foreign language. *5 Credit Hours (2.5 each term)*.

LC 201-202. CHINESE

LF 201-202. FRENCH

LG 201-202. GERMAN

LP 201-202. PORTUGUESE

LR 201-202. RUSSIAN

LS 201-202. SPANISH

Continuation of the 101-102 courses, with increased emphasis on applied grammar through discussions, dialogues, individual talks, and frequent aural comprehension exercises. Periodic themes. Reading and discussion of several literary works and of historical, geographical, and military material of current interest. Five or six lectures on the history and civilization of the people whose language is being studied. All work conducted in the foreign language. *8 Credit Hours (4 each term)*.

Accelerated Courses

LF 141-142. FRENCH

LG 141-142. GERMAN

LS 141-142. SPANISH

Prerequisite: One or two years of previous study of the language.

An intermediate course with oral-aural emphasis and a thorough grammar review. Audio-lingual skills are developed by use of pattern drills, question and answer exercises, dialogues, and individual talks. Texts of literary value are read and discussed in class. All classroom work is in the foreign language. *5 Credit Hours (2.5 each term.)*

LF 241-242. FRENCH

LG 241-242. GERMAN

LS 241-242. SPANISH

Prerequisite: Completion of the 141-142 courses.

Continuation of the 141-142 courses, with increased emphasis on grammatical and syntactical accuracy, both in speech and writing. Reading of selected modern works, to include some writings on military subjects. Periodic themes. Five or six lectures on various cultural aspects of the people whose language is being studied. All classroom work is in the foreign language. *8 Credit Hours (4 each term)*.

Advanced Courses

LF 151–152. FRENCH

LG 151–152. GERMAN

LR 151–152. RUSSIAN

LS 151–152. SPANISH

Prerequisite: Proficiency based on oral and written tests administered prior to the beginning of Fourth Class year.

Intensive grammar review, with aural-oral emphasis. Extensive use of pattern drills, question and answer exercises, dialogues, individual talks, and periodic themes. Reading and discussion of modern drama and fiction. All classroom work is in the foreign language. *5 Credit Hours (2.5 each term)*.

LF 251–252. FRENCH

LG 251–252. GERMAN

LR 251–252. RUSSIAN

LS 251–252. SPANISH

Prerequisite: The 151–152 courses in the corresponding language.

Increased use of audio-lingual techniques, talks, debates, and interpreter exercises. Reading in a wider field of literature. Greater emphasis upon the culture and history of the countries concerned, including a series of lectures. Some reading of military writings. All classroom work is in the foreign language. *8 Credit Hours (4 each term)*.

Elective Courses

LC 381. CHINESE LANGUAGE THROUGH READINGS IN HISTORY AND CIVILIZATION
(First Term)

Prerequisite: LC 201–202

Readings in Chinese history and civilization. Class discussions, oral and written compositions, all in Chinese. *2.5 Credit Hours*

LF 381. FRENCH LANGUAGE THROUGH LITERATURE (First Term)

LG 381. GERMAN LANGUAGE THROUGH LITERATURE (First Term)

LP 381. PORTUGUESE LANGUAGE THROUGH LITERATURE (First Term)

LR 381. RUSSIAN LANGUAGE THROUGH LITERATURE (First Term)

LS 381. SPANISH LANGUAGE THROUGH LITERATURE (First Term)

Prerequisite: The 201–202 or 241–242 Courses in the corresponding languages. Not open to cadets who have completed the applicable 251–252 courses.

Readings in literary works by French, German, Brazilian, Russian, Spanish, or South American writers. Class discussions, oral and written compositions, all in the appropriate foreign language. *2.5 Credit Hours*.

LC 382. MILITARY READINGS IN CHINESE (Second Term)

Prerequisite: LC 201–202

Military readings in Chinese. Class discussions, themes, translations into and from Chinese, interpreter exercises. *2.5 Credit Hours*.

LF 382. MILITARY AND SCIENTIFIC READINGS IN FRENCH (Second Term)

LG 382. MILITARY AND SCIENTIFIC READINGS IN GERMAN (Either Term)

Prerequisite: The 201–202 or 241–242 or 381 courses in the corresponding language.

Military and scientific readings. Class discussions, themes, translation into and from the foreign language. *2.5 Credit Hours.*

LP 382. SURVEY OF BRAZILIAN LITERATURE (Second Term)

LR 382. RUSSIAN LANGUAGE THROUGH LITERATURE (Second Term)

LS 382. SPANISH LANGUAGE THROUGH LITERATURE (Second Term)

Prerequisite: The appropriate 381 course, plus demonstrated ability to use the language in more complex situations.

Studies in the history and literature of the respective countries. Class discussions, comparative studies, oral and written presentation of material, all in the appropriate foreign language. *2.5 Credit Hours.*

LF 483. CIVILIZATION AND LITERATURE OF FRANCE (First Term)

Prerequisite: LF 251-252 or LF 381-382 or LF 241-242 (upper half) courses.

This course is an integrated study of geography, history and literature, introducing the cadet to the most significant political and social changes as well as to the most typical literary works of each period in order to form a comprehensive picture of the country's life and culture. Contributions to the civilization of the western world will be emphasized. Classroom work is in the foreign language. *2.5 Credit Hours.*

LF 484. CONTEMPORARY FRANCE (Second Term)

Prerequisite: LF 251-252 or LF 381-382 or LF 241-242 (upper half) or LF 483 courses.

Continuation of LF 483—Civilization and Literature of France. *2.5 Credit Hours.*

LG 483. HISTORY OF GERMAN CIVILIZATION (First Term)

Prerequisite: LG 382 or LG 252.

This course is an integrated study of the geography, history, and culture of Germany, introducing the cadet to the most significant political, social and economic, and artistic events of each period in the country's growth and development. Emphasis will be placed on the German contributions to Western Civilization. "History of German Civilization" will be a comprehensive survey. Classroom work is in the foreign language. *2.5 Credit Hours.*

LG 484. CONTEMPORARY GERMANY (Second Term)

Prerequisite: LG 382 or LG 252.

This course is a detailed study of contemporary Germany, introducing the cadet to the political, social, economic, and artistic events since the end of World War II. Emphasis will be placed on Germany's national problems and on her contributions to the Western community of nations, to the Common Market, and to NATO. Classroom work is in the foreign language. *2.5 Credit Hours.*

LR 483. MILITARY AND SCIENTIFIC READINGS IN RUSSIAN (First Term)

Prerequisite: LR 251-252 or LR 381-382.

Intensive readings in scientific and military works to prepare the student to read and understand current Russian publications on these subjects. *2.5 Credit Hours.*

LR 484. RUSSIAN CIVILIZATION (Second Term)

Prerequisite: LR 251-252 or LR 381-382.

Greater proficiency in the language to be acquired through a survey of the historical and cultural elements that have developed the USSR and the Russian people. Classroom work is in the foreign language. *2.5 Credit Hours.*

LS 483. SURVEY OF SPANISH-AMERICAN LITERATURE (First Term)

Prerequisite: LS 251-252 or LS 381-382 or LS 241-242 (upper half).

A study of outstanding modern authors of Spanish-American literature. The development and transformation of existing literary genres; new literary forms, Hispanic-American literature as a mirror of history and society of the nations involved. Classroom work is in the foreign language. *2.5 Credit Hours.*

LS 484. MODERN SPANISH-AMERICAN LITERATURE (Second Term)

Prerequisite: LS 251-252 or LS 381-382 or LS 241-242 (upper half).

Continuation of LS 483—Survey of Spanish-American literature *2.5 Credit Hours.*

LF 485. SURVEY OF FRENCH LITERATURE (First Term)

LG. 485. SURVEY OF GERMAN LITERATURE (First Term)

LS 485. SURVEY OF SPANISH LITERATURE (First Term)

Prerequisite: The appropriate 251-252 or 381-382 courses.

A survey course of the literature of France, Germany, or Spain. Class discussions, themes, outside reading, reports, in the appropriate foreign language. *2.5 Credit Hours.*

LF 486. MODERN FRENCH LITERATURE (Second Term)

LG 486. MODERN GERMAN LITERATURE (Second Term)

LS 486. MODERN SPANISH LITERATURE (Second Term)

Prerequisite: LF 485 or LG 251-252 or LG 381-382 or LG 485 or LS 485 courses.

Advanced studies in the contemporary literature of France, Germany, and Spain, with class discussions, themes, etc., in the appropriate foreign language. *2.5 Credit Hours.*

LP 485. DIRECTED STUDIES IN PORTUGUESE (First Term)

LF 487. DIRECTED STUDIES IN FRENCH (First Term)

LG. 487. DIRECTED STUDIES IN GERMAN (First Term) (Not offered in 1968-69)

Prerequisite: LP 381-382 or LF 485-486 or any two semesters in the LG 400 series.

These courses are intended for those cadets who have the demonstrated language ability and a strong personal desire to accomplish a more detailed study of a particular period of history or literature. All work will be done in the foreign language. Cadets taking these courses will meet individually with the instructor at least once a week. *2.5 Credit Hours.*

LP 486. DIRECTED STUDIES IN PORTUGUESE (Second Term)

LF 488. DIRECTED STUDIES IN FRENCH (Second Term)

LG 488. DIRECTED STUDIES IN GERMAN (Second Term) (Not offered in 1968-69)

Prerequisite: LF 487 or LP 485 or any two semesters in the LG 400 series.

Continuation: LF 485, LF 487, LG 487—Directed Studies in Portuguese, French or German. *2.5 Credit Hours.*

DEPARTMENT OF MATHEMATICS

Professors: COL John S. B. Dick (Head of Department) and COL J. M. Pollin.

Associate Professors: COLs W. H. Karstedt, T. E. Rogers; LTC D. H. Cameron.

Assistant Professors: LTCs T. C. Bielicki, E. A. Daggit, D. F. Garvais, G. W. Medsger; MAJs R. H. Allison, T. R. Bennett, P. G. P. Eliot, F. H. Griffis, Jr., H. P. Johnson, E. V. Karl, P. Makowski, J. W. Searles, W. J. Skinner, C. H. Spence, J. R. Strickland, R. E. Works, W. T. Zaldo, III.

Instructors: MAJs J. E. Brown, W. F. Chamberlain, W. C. Conley, R. A. Gagliano, V. G. Grande, Jr., E. E. Hildreth, Jr., J. R. Hocker, R. C. Lee, W. M. Lewis, Jr., E. S. Lynch, R. A. McDonald, I. R. Mechtly, Jr., R. E. Miles, M. L. Popovich, R. R. Redhair, R. C. Sadler, J. K. Solomon, L. E. Welsh; CPTs G. W. Bowers, Q. P. Boyd, R. C. Buckner, H. B. Coulter, P. G. Dombrowski, G. R. Duncan, R. E. Garvey, Jr., L. C. Gregor, W. G. Kosco, W. J. Reynolds.



Mathematics at West Point is organized into programs as ascending levels, known as standard, advanced, and elective. In the first two years every cadet is enrolled in either the standard program or in one of three advanced programs, depending on his mathematical preparation and aptitude. The elective program is available to all cadets during the third and fourth years, and overlaps with the advanced programs during the first two years.

Successful completion of the standard program by the end of the second year satisfies the requirement in mathematics for graduation from the Military Academy. The three advanced programs are designed for cadets who, by virtue of exceptional aptitude or above-standard preparation before entering West Point, are able to satisfy the standard program requirement in less than two years, thus gaining time for enriched or advanced courses containing material offered in the elective program. Such cadets complete from 6 to 11.5 credit hours of enriched or advanced material

during their first two years. Cadets in an advanced program who are not able to maintain proper progress are transferred to a lower program.

During the first year cadets attend mathematics 6 days a week; during the second, 3 days a week. They perform five independent exercises on the digital computer during these two years. The courses constituting the standard and advanced programs are shown below.*

Standard Program: First year, MA 101–102; second year, MA 201–202.
23 Credit Hours.

Advanced Program I: First year, MA 101–152; second year, MA 251–202.
23 Credit Hours, of which 6 are enriched or advanced material.

Advanced Program II: First year, MA 153–154; second year, MA 251–202.
23 Credit Hours, of which 7 are enriched or advanced material.

Advanced Program III: First year, MA 155–156; second year, MA 483–485–484. 23 Credit Hours, of which 11.5 are enriched or advanced material.

(Note. During his first year in Program III the cadet completes the mathematics required for graduation. His electives during the second year need not be in mathematics, but if he chooses mathematics the appropriate courses are those shown above.)

The subject-matter content of the separate courses is described in the outlines to follow.

Standard Courses

MA 101. CALCULUS AND ANALYSIS

This is the first term course in the first year of the Standard Program. The study of calculus begins early in the term of a brief introduction to the foundations of the number system, to include measurement, the concept of epsilon, variables, limits, and controlled numerical approximations, followed by study of functions of a single real variable, the delta-epsilon criterion, and continuity. Prerequisite topics of vector analytic geometry in two and three dimensions are introduced in coordination with the work in calculus, which includes the study of derivatives and differentials of algebraic and transcendental functions, with fundamental applications. Numerical methods suitable to electronic digital computation are emphasized.
7.5 Credit Hours.

MA 102. LINEAR ALGEBRA, CALCULUS AND ANALYSIS

This is the second term course in the first year of the Standard Program. The course includes 3 credit hours of work in linear algebra which is coordinated with a continuation of the calculus begun in MA 101 in the first term. The three hours of work in linear algebra include a study of matrices, determinants, systems of

*Courses renumbered with this catalogue and differ with previous years.

linear equations, vector spaces, linear transformations, characteristic values and vectors, and quadratic forms. It includes an introduction to linear programming, which treats the optimal solution of a linear system of the type encountered in military applications. The work in calculus includes further applications of the derivative, derivatives of functions defined parametrically, and an introduction to differential equations in which emphasis is given to the central force problem, with applications to long-range trajectories and orbits. The course then continues with partial differentiation and applications, and an introduction to vector calculus. It concludes with the fundamental concepts of integral calculus, including formal integration and an introduction to elementary numerical approximations of definite integrals. Again numerical methods are emphasized, with suitable exercises in electronic digital computation. The concluding lessons in solid analytic geometry, plus some work in spherical trigonometry essential for military applications, are included at the start of the term. *7.5 Credit Hours.*

MA 201. CALCULUS AND DIFFERENTIAL EQUATIONS

This course is given during the first term of the Standard Program cadet's second year of mathematics. It further develops the integral calculus started in MA 102, to include applications to geometrical and physical problems, infinite series, expansion of functions, and multiple integrals. Problems requiring digital computation are assigned concurrently. The calculus is followed by the first half of 2 credit hours of work in differential equations which is immediately continued in the second term. This brief course in differential equations continues from the introduction to differential equations given in the first year calculus, and treats solutions of standard types of first, second and higher order equations using integrating factors, undetermined coefficients, variation of parameters, the LaPlace transform, and power series. Solutions by numerical methods are included, with an applicatory exercise using the digital computer. Basic methods for the solution of systems of linear differential equations and partial differential equations are introduced. The course includes applications of ordinary and partial differential equations in physics and engineering. *4 Credit Hours.*

MA 202. DIFFERENTIAL EQUATIONS, AND PROBABILITY THEORY AND STATISTICAL INFERENCE

This is the final term in the mathematics Standard Program sequence required for graduation from USMA. It includes the last half of the total of 2 credit hours of work in differential equations begun in the first term and is immediately followed by 3 credit hours of work in probability theory and statistical inference which emphasizes calculus as a prerequisite. Included are fundamentals of probability theory and mathematical models to include random variables, probability distributions and measurements of these distributions, probability and density functions; binomial and normal distributions; use of de Moivre's theorem, the Central Limit theorem, and the Student-t, Chi-Square and Poisson distributions; basic statistical inference including sampling distributions, theory of estimation, hypothesis testing; correlation; and applications of these techniques to practical problems. *4 Credit Hours*

Advanced Placement Courses

MA 152. ADVANCED PLACEMENT LINEAR ALGEBRA, CALCULUS AND ANALYSIS

This course is given in the second term of the first year to selected cadets who complete MA 101 with high standing and thereby become eligible for Advanced

Program I. The course includes 3 credit hours of work in linear algebra which is coordinated with a continuation of the calculus begun in MA 101 in the first term. The three hours of work in linear algebra is at a higher level than that in MA 102 and includes a study of vector operations and vector spaces, matrices, determinants, properties of linear transformations, systems of linear equations, characteristic values and vectors, and quadratic forms. It includes an introduction to linear programming, which treats the optimal solution of a linear system of the type encountered in military applications. The calculus coverage in MA 152 encompasses that in MA 102 plus additional calculus ordinarily covered in the second year of the Standard Program. The course concentrates on a rigorous treatment of integral calculus for functions of a single real variable, expansion of functions, and infinite series. It includes a chapter on differential equations, with a study of the central force problem and applications to long range trajectories and orbits. It includes also an introduction to calculus of functions of two or more variables and vector calculus. *7.5 Credit Hours*

MA 153. ADVANCED PLACEMENT CALCULUS AND ANALYSIS

This course is given in the first term of the first year to cadets selected on their pre-entrance record in mathematics for placement in Advanced Program II. The scope encompasses the subject matter of MA 101 plus a significant part of MA 102. The work concentrates on introductory function theory, a rigorous treatment of differential calculus for functions of a single real variable, and a chapter on differential equations with emphasis on the central force problem and applications to long range trajectories and orbits. The course ends with the beginning study of 4 credit hours of work in linear algebra and linear programming, the major portion of which is then continued in the next term. *7.5 Credit Hours*

MA 154. ADVANCED PLACEMENT LINEAR ALGEBRA AND LINEAR PROGRAMMING, CALCULUS AND ANALYSIS

This is the second term course in the first year of Advanced Program II. It includes the major portion of a total of 4 credit hours of work in linear algebra and linear programming begun in the first term, and is coordinated with the resumption of the calculus begun in MA 153. The work in linear algebra and linear programming is more extensive than that in MA 152. It includes a study of vector operations, vector spaces, matrices, determinants, properties of linear transformations, systems of linear equations, characteristic values and vectors, and quadratic forms. The linear programming portion treats the optimal solution of a linear system. It includes an introduction to convex sets and n-dimensional geometry, a development of the linear programming problem, and the simplex computational procedure. Practical problems are included, with emphasis on military applications and their solution with aid of the digital computer. The calculus coverage in MA 154 encompasses the portion of MA 102 not already covered by MA 153, plus additional calculus ordinarily covered in the second year of the Standard Program. The course concentrates on a rigorous treatment of integral calculus for functions of a single real variable, expansion of functions, and infinite series. It includes also an introduction to calculus of functions of two or more variables and vector calculus. *7.5 Credit Hours*

MA 155. ADVANCED PLACEMENT CALCULUS, ANALYSIS AND LINEAR ALGEBRA

This course is given in the first term of the first year to cadets selected on their pre-entrance record in mathematics for the highest level of advanced placement; i.e., Advanced Program III. It is an accelerated course in introductory function theory plus a rigorous treatment of differential and integral calculus, to include a chapter on

differential equations with emphasis on the central force problem and applications to long range trajectories and orbits. The scope encompasses the subject matter of first and second year Standard Program calculus and analysis, plus the beginning study of 3.5 credit hours of work in linear algebra and linear programming, the major portion of which is then continued in the next term. *7.5 Credit Hours*

MA 156. ADVANCED PLACEMENT LINEAR ALGEBRA AND LINEAR PROGRAMMING, DIFFERENTIAL EQUATIONS, AND PROBABILITY THEORY AND STATISTICAL INFERENCE

This is the second term course in the first year of Advanced Program III. This course includes the major portion of a total of 3.5 credit hours of work in linear algebra and linear programming begun in the first term. The work in linear algebra and linear programming is comparable to that in MA 154. This is followed by 2 credit hours of work in differential equations and 3 credit hours of work in probability theory and statistical inference which is ordinarily covered in the second year of the Standard Program (see MA 201 and 202 for a description of content). *7.5 Credit Hours*

MA 251. ADVANCED CALCULUS I AND DIFFERENTIAL EQUATIONS

This course is given in the first term of the second year to cadets who completed Advanced Program I or II (MA 152 or 154) during their first year. The first 3 credit hours of work are the same as that covered by Advanced Calculus I, MA 483. This is then followed by the first half of 2 credit hours of work in differential equations as described in MA 201. Cadets in Advanced Programs I and II continue with MA 202 in the second term. *4 Credit Hours*

Elective Courses

These courses in junior and senior level undergraduate mathematics are offered to all cadets as electives during their third and fourth years at West Point. In addition, qualified cadets may complete one or more of these courses during their second year at West Point, as participants in an advanced program.

MA 481. LINEAR PROGRAMMING (Second Term)

(Not open to cadets who completed Advanced Programs II or III their Fourth Class year.)

Prerequisite: MA 102 or MA 152. Department permission required.

This course treats the optimal solution of a linear system. It includes an introduction to convex sets and n -dimensional geometry, a development of the linear programming problem, and the standard original and revised simplex computational procedures. Also, the duality problems and degeneracy procedures of linear programming are included, and additional computational techniques applicable to specific mathematical models are investigated. The correspondence between the general linear programming problem and the theory of games is developed and demonstrated. Practical problems are included, with emphasis on military applications and their solution with aid of the digital computer. *2.5 Credit Hours*

MA 482. ABSTRACT ALGEBRA (Second Term)

Prerequisite: Advanced Programs I, II or III (Third Class Year) or MA 483. By permission of the Head of the Department of Mathematics only.

This is an introductory course in the abstract structures of algebra for those cadets planning specifically to take graduate work of a theoretical nature in mathematics or physics. The subject is introduced by a study of mappings and operations defined on sets. The development of group and ring theory is the basis of the course.

A study of the ring of polynomials and examples of fields are included. The course culminates with vector spaces as the unifying concept. *2.5 Credit Hours*

MA 483. ADVANCED CALCULUS I (First Term)

Prerequisite: Advanced Programs I, II or III (Fourth Class Year) or MA 201. Department permission required.

This course treats differential and integral calculus of scalar and vector functions of more than one variable to include: Jacobians, gradient, curl, divergence, multiple integrals, line and surface integrals, Green's Theorem, the Divergence Theorem and Stokes' Theorem. Applications to problems in physics and engineering are emphasized.

2.5 Credit Hours (Afternoon Elective)

3 Credit Hours (Morning Elective)

MA 484. DIFFERENTIAL EQUATIONS (Intermediate) (Either Term)

Prerequisite: Advanced Programs I, II or III (Third Class Year) or MA 483. Department permission required.

This course is an extension of the concepts developed in MA 202. Elementary techniques are reviewed. Existence and uniqueness theory is developed and is followed by a thorough treatment of the theory of linear differential equations. Sturm-Liouville boundary value problems and Fourier Series are considered and applied to the theory of partial differential equations. Non-linear theory is introduced.

2.5 Credit Hours

MA 485. ADVANCED CALCULUS II (Complex Variable) (Either Term)

Prerequisite: Advanced Programs I, II or III (Third Class Year) or MA 483. Department permission required.

This course is primarily an introduction to functions of a complex variable, including algebra of a complex variable, elementary functions, limits, derivatives. Cauchy's Integral Theorem and Formula, series representation to include Taylor's and Laurent's series, theory of residues, conformal mapping and linear transformations, Poisson's Integral Formula, and special topics in complex potential. *2.5 Credit Hours.*

MA 486. NUMERICAL ANALYSIS WITH DIGITAL COMPUTATION (Second Term)

Prerequisite: MA 202. (May be taken concurrently.) Department permission required.

This course emphasizes the methods of numerical analysis with the digital computer in a strong supporting role. It includes methods grouping together the cadet's entire mathematical background in linear algebra, calculus, and differential equations in a context of modern numerical methods requiring programming and execution of solutions on the digital computer. *2.5 Credit Hours*

MA 487. REAL VARIABLE THEORY (First Term)

Prerequisites: MA 483 and MA 485. By permission of the Head of the Department of Mathematics only.

This course is designed only for those cadets interested in pursuing graduate mathematics study. It introduces students to Dedekind cuts, advanced set theory, metric spaces, and some concepts in topology. Many topics from the calculus previously studied, such as convergence, continuity, and sequences are studied more deeply in this setting. The properties of the definite integral are expanded to the Riemann-Stieltjes integral. *2.5 Credit Hours*

DEPARTMENT OF LAW

Professor: COL F. C. LOUGH (Head of Department).

Associate Professor: LTC T. C. Oldham.

Assistant Professors: LTC J. Norton, LTC R. W. Jones; MAJ P. J. Kenny, CPTs J. S. McAuliffe, J. T. Sherwood, Jr.

Instructors: CPTs G. F. Jacob, F. W. Joynt, J. K. McGuirk, T. L. Moore, Jr., Enoch M. Overby III, W. V. Mallard, T. W. Morriss, E. W. Murphy, R. A. Peterson, R. T. Pope, 1LT Boysen.

Standard Courses

LW 301. LEGAL PHILOSOPHY AND BASIC PRINCIPLES OF LAW; LEGAL METHODS OF PROOF

Legal Philosophy and Basic Principles of Law. An examination of the principal theories of law which have been set forth by prominent legal philosophers of Western Civilization as well as an introduction to the nature and application of law and a coverage of the functions of some of the traditional legal subjects including contracts, torts and property.

Legal Methods of Proof. An introduction to the Anglo-American rules of proof and the logical basis for such rules with particular emphasis on developing an ability to think logically and to reason rationally in both legal and non-legal areas. *2.5 Credit Hours.*

LW 302. CONSTITUTIONAL LAW MILITARY LAW

Constitutional Law. An examination of the constitutional concept of the United States government including legislative, judicial, and executive powers and limitations; individual rights under the Constitution; the defense establishment, constitutional powers with respect to International Law, Law of War, and legal aspects of civil affairs and counterinsurgency.

Military Law. A study of punishments, the component parts of crimes and offenses, criminal responsibility, selected articles of the UCMJ, jurisdiction, pre-trial matters, nonjudicial punishment and courts-martial procedures. Basic theories and practical procedures are joined to enhance the cadet's ability to discharge his future responsibilities in military law. *2.5 Credit Hours.*

Elective Course

LW 481. INTERNATIONAL LAW (*Either Term*)

An introduction to International Law to include a discussion of the nature and sources of International Law; problems of nationality; recognition of states; jurisdiction of states; international agreements and diplomatic intercourse; and the law of war. *2.5 Credit Hours.*

DEPARTMENT OF MILITARY ART AND ENGINEERING

Professors: COL C. H. Schilling (Head of Department), COL T. E. Griess.

Associate Professors: LTCs R. D. Pinto, M. D. Johnson.

Assistant Professors: LTCs R. L. Ackerson, R. J. Eineigl, C. T. Earnest, E. J. Rush, J. Rutledge; MAJs J. P. Franklin, R. W. Miller, D. J. Palladino, D. R. Palmer, L. F. B. Reed, H. Turek, J. W. Woodmansee, LCDR C. A. Sorenson.

Instructors: LTCs N. J. Andre, T. W. Collier, C. E. Sell, W. K. Stockdale; MAJs R. V. Brass, J. F. Corby, D. E. Cluxton, P. C. Driscoll, J. W. Dunn, E. C. May, C. T. Ogren, N. J. Robinson, J. E. Torrence, R. L. Tripp.

Standard Courses

HM 401–402. HISTORY OF THE MILITARY ART

Prerequisites: MI 301–302. (May be taken concurrently.)

The evolution of the art of war—on land, on sea, and in the air, and its probable course in the future. Beginning with the campaigns of Alexander of Macedon, this course explains the changes in concepts of warfare which led to the replacement of royal armies by national armies, and to the emergence of global and total wars. The historic development and modern application of all types of warfare are considered. Throughout the course, emphasis is given to: the impact of continuous technological and industrial progress on the techniques of warfare through the development of new weapons and equipment; the gradual recognition, formulation, and application of the governing principles of war; the increasing influence of logistics on strategy and tactics; the growing interrelationship of land, sea, and air power, and the consequent problems and principles involved in the organization and functioning of high commands in joint operations; the resurgence of irregular and unconventional warfare; the attributes of outstanding great captains and their contributions to the art of war; and the doctrines and philosophies of important military thinkers and writers. The course also points out the impact on warfare of nonmilitary factors—treated in detail by the Department of Social Sciences—concurrently with the study of military operations. *8 Credit Hours.*

CE 401. STRUCTURAL ANALYSIS

Prerequisites: ME 303 or ME 353. (ME 384 is recommended.)

Analysis of stresses in statically determinate and indeterminate structures and structural members due to uniform loadings, concentrated loadings, and combinations thereof. It includes determination of reactions, shear, moment, and axial stresses; placement through the use of influence lines of moving live loads to produce maximum stress; the analysis of maximum stress in simple and subdivided, parallel and non-parallel chord trusses, continuous beams, and basic structural frames; the analysis of members subject to reversal of stress; introduction to the analysis of long span structures, space frames, and cables; and approximate methods of analysis of indeterminate structures. Analytical methods utilized for indeterminate structures include moment-area theorems, slope deflection and moment distribution. The augmented course given upper sections (upper 30–40 percent of class) consists of the above with advanced additional material. The upper section cadet pursues one of four elective subcourses during the last six lessons of the term. These subcourses cover matrix methods, and energy methods. Throughout the



Engineer Design Problem

course emphasis is given to development of an understanding of the engineering philosophy and the decision-making process. *4 Credit Hours.*

CE 402. STRUCTURAL DESIGN AND FIELD ENGINEERING

Prerequisite: CE 401.

Study of the principles and theory of design of steel and timber structures, with an introduction to reinforced concrete design. The Steel Design subcourse includes design of beams, tension and compression members, and riveted and welded joints. The engineering characteristics of timber as a material and the design of simple timber structural members are included in the Timber Design subcourse. A large portion of the course is devoted to the solution of a complete engineering design problem starting with the development of the engineering concept and requiring creative thought and the application of principles studied previously. The introductory study of soils includes classification and identification systems and engineering characteristics of soils. Instruction in concrete includes engineering characteristics of concrete as a material, fundamentals of concrete proportion and mix design, and placement and curing. Concrete laboratory work includes standard quality and control tests and demonstration of the fundamental laws.

The augmented course given upper sections includes a more extensive coverage of the above topics with the following additional material: a more comprehensive engineering design problem. Throughout the course emphasis is given to development of an understanding of the engineering philosophy and decision-making process. *4 Credit Hours.*

Advanced and Honors Courses

CE 451-452. HONORS COURSE IN CIVIL ENGINEERING

Prerequisite: ME 303. (ME 384 is recommended.) Standing in top 100 students in General Order of Merit plus having a demonstrated ability in mathematics, physics, and mechanics, of solids.

Note. All cadets who meet the prerequisites will be notified in May of the Academic Year preceding the year they are scheduled for CE 401 or CE 453. The 12 most qualified volunteers, as determined by the Head of the Department, will then be enrolled in CE 451-2 in lieu of CE 401-2 or CE 453-4.

The Honors Course for exceptionally capable cadets includes the topics listed above in the two standard courses (CE 401 and CE 402). The cadet accelerates this study at a pace determined by his own individual capability. He is excused from regular class formations, instead meeting as required with his advisor. Teaching techniques normally used for graduate studies are employed. These emphasize individual study and research. Time saved by accelerated study is used to cover each subject in more depth through the use of additional references and to study advanced topics of cadet choice and to accomplish an individual analytical and/or laboratory project.

The advanced topics studied represent approximately one-third of the course, and in combination with the deeper coverage of the standard course material result in an increase of approximately fifty percent over the scope of the standard course. Typical approved additional topics from which the cadet may choose include but are not restricted to the following:

Structural Analysis: Numerical integration for shear, moment, and deflection; conjugate beam theory; advanced topics in slope deflection and moment distribution; Castigliano's theorem; theory of least work; structural applications of ectopology, matrix methods, and network analogy; electronic digital computers and their application to the solution of civil engineering problems.

Structural Design: An extension of reinforced concrete design; basic theory of prestressed concrete; optimization techniques in design; and probability approach to safety factors.

Soils and Concrete: Concrete laboratory techniques, soil mechanics laboratory, and soil trafficability. *8 Credit Hours.*

CE 453-454. INTRODUCTION TO NUCLEAR ENGINEERING

Prerequisites: ME 303 or ME 353, PH 305. (EL 382, ME 384 are recommended.) PH 487 is a concurrent requirement with CE 453 (exceptions may be made by the Head of the Department).

This course is offered to selected cadets in lieu of, or in addition to, the standard Civil Engineering course CE 401-402. It provides study of engineering principles applied in the broad nuclear power field, with emphasis on the engineering philosophy involved in the transition from scientific theory to the solution of practical problems. The course includes the basic principles of structural analysis, radiation effects and health physics, radiation attenuation and shield design, pressure vessel design, and reactor and energy conversion system analysis and design. Introduction to nuclear power plant economics and to engineering applications of nuclear explosives are also included. The course culminates in a complete engineering design problem illustrating the theory and principles studied previously. *8 Credit Hours.*

Elective Courses

HM 381. REVOLUTIONARY WARFARE (Either Term)

Prerequisite: None.

A study of the art of waging and countering revolutionary warfare. By selected historical examples, the cadet examines the various causes and forms of revolu-

tionary warfare and learns to appreciate the unique political-social-military nature of the struggle. He explores the roles and methods of the guerrilla and the requirements and techniques of counterrevolutionary forces. The course includes a survey of outstanding revolutionary theorists, with special emphasis on communist doctrine and experience. Some of the campaigns covered are: The Boer War (1899-1902), The Irish Rebellion (1916-1921), Guerrilla Warfare in World War II, Mao Tse-tung and the conquest of China, British experience in Malaya and Cyprus, French struggles in Indochina and Algeria, the Greek Civil War (1946-49), the Hukbalahap in the Philippines, and the struggle in Vietnam. *2.5 Credit Hours.*

HM 481. EVOLUTION OF MODERN WARFARE (1400-1900) (First Term)

Prerequisite: HM 401. (May be taken concurrently.)

The course traces the evolution of the art of warfare in the western world from the late Medieval Age to the dawn of the twentieth century. Supplementing the material presented in the History of the Military Art course (HM 401-402), this elective probes more deeply into the correlative development of weapons, tactics, strategy and organization, theories of warfare, and defense of the state. *2.5 Credit Hours.*

HM 484. TWENTIETH CENTURY WARFARE (1900-THE PRESENT) (Second Term)

Prerequisite: HM 402. (May be taken concurrently.)

This course provides a study of the evolution of warfare during the 20th century by emphasizing the development of weaponry, tactics, organization and generalship. Beginning with the Russo-Japanese War of 1904-05, the major wars of the century are considered in their operational aspects as well as their impact on the development of the military art. A portion of the course is devoted to a consideration of some of the major command decisions of World War II in order to develop a better understanding of the pertinent factors which led to their solutions. This course supplements HM 402 by a more penetrating study of the development of modern warfare than is possible in the broad scope of the regular course. *2.5 Credit Hours.*

CE 381. SOIL MECHANICS (Either Term)

Prerequisite: ME 303 or ME 353. (May be taken concurrently.)

A study of the fundamentals of soil mechanics and the application of these fundamentals to engineering problems. The introductory lessons are focused on an understanding of the composition and structure of granular and clay soils and soil-water consistency. Other soil characteristics studied include permeability, stress distribution, consolidation, shearing strength, slope stability, bearing capacity and earth pressures. These studies are combined with the principles of engineering mechanics and mathematics in attacking and solving practical problems such as prediction of settlement, calculation of seepage, drainage design, earth dams and embankments, footing and pile foundations, retaining walls, soil stabilization and soil trafficability. The use of electronic computers in these applications is demonstrated where applicable. Basic laboratory work comprises determination of Atterberg limits, soil compaction, unconfined compression, direct shear, flow net analysis and other tests associated with the solution of soil engineering problems. *2.5 Credit Hours.*

CE 481. DESIGN OF CONCRETE STRUCTURES (Either Term)

Prerequisites: ME 303 or ME 353, CE 401. (CE 401 may be taken concurrently.) (ME 384 is recommended.)

The theory of reinforced concrete design and analysis. This course includes a basic study of concrete as a material, laboratory investigations and demonstrations, and the design and analysis of conventional structural elements. The scope includes beams, continuous one-way and two-way slabs, eccentrically loaded columns, and footings. Ultimate strength theory is emphasized. The course culminates in an engineering design problem which utilizes most of the material covered in the course. A small number of selected cadets taking this course in the first term may participate in a research project during the second term under Course CE 484, Individual Engineering Projects. Application of computers is included wherever appropriate. Emphasis is given throughout the course to the development of an understanding of the philosophy of engineering and the decision-making process. *2.5 Credit Hours.*

CE 482. ADVANCED STRUCTURAL ANALYSIS (Second Term)

Prerequisite: CE 401. (ME 384 is recommended.)

Continuation of the study of structural analysis (CE 401), mainly in the area of indeterminate structures. Methods of analysis appropriate to both the elastic and plastic theory are studied. Elastic theory methods include conjugate beam, virtual work, Castigliano's Theorem, and the method of least work. Nuclear blast dynamic loads and numerical approximate analysis such as numerical integration of the beam differential equations and the finite differences method are considered. Matrix methods of structural analysis which are useful in computer solutions are introduced. Engineering design problems are included to give a comprehensive review of the course. Throughout the course, emphasis is given to the development of an understanding of the engineering philosophy and the decision-making process. *2.5 Credit Hours.*

CE 484. INDIVIDUAL ENGINEERING PROJECTS (Second Term)

Prerequisite: CE 401.

The objective of this course is to permit the cadet to concentrate his study in an area of particular individual interest dealing with a specialized topic in military or civil engineering either within or outside the scope of the standard course. CE 401-402. The course is conducted on a small group or individual basis and consists of field trips, laboratory and classroom work and group discussion. The exact scope of the course of study will be established through discussion between the cadet and the Course Director. The course is presented so that the cadet is required to define and analyze the problem and its parameters; to study the fundamentals involved; to organize his own plan of attack; to determine his laboratory procedure if laboratory work is involved; and to achieve a solution. Throughout, emphasis is given to the engineering decision-making process. *2.5 Credit Hours.*

DEPARTMENT OF MILITARY HYGIENE

Professor: COL J. H. Voegtly (Head of Department).

Assistant Professor: MAJ R. J. Summary.

The Department of Military Hygiene presents instruction to the cadets during their first two years at the Military Academy.

During the summer of the Fourth Class year, the cadet receives instruction in self and first aid, field sanitation and personal hygiene. In the academic portion of the Fourth Class year, the cadet receives instruction in the basic anatomy and physiology of the reproductive system and the effects of alcohol, tobacco and drugs.

During the Third Class summer training, the cadet receives instruction in the effects of the environment on units in the field and additional instruction in first aid with emphasis placed on the responsibility of the commander at small unit level.



DEPARTMENT OF MECHANICS

Professors: COL E. R. Heiberg (Head of Department), COL F. A. Smith, Jr.

Associate Professors: LTC J. D. Daigh; MAJs H. N. Schwarzkopf, J. M. Sigler.

Assistant Professors: MAJs R. D. Kenyon, B. A. Logerquist, R. L. Parsons, C. M. Radler, A. M. Solberg; CPTs D. E. Beach, L. F. Ermold, J. B. Hilmes, G. R. Kleb, B. D. Marsh, R. D. Welch, Jr.

Instructors: MAJs W. R. Parks, D. R. Pope, G. W. Williams, R. C. Bennett; CPTs T. P. Hueman, S. W. Hickman, H. D. Kevin, N. J. Kuklinski, P. F. Lagasse, F. B. Plummer, II, F. J. Redd, R. S. Seward, T. K. Seybold.

Standard Courses

ME 301. THERMODYNAMICS

A study of the transfer and conversion of thermal energy and mechanical energy. The course includes a study of fundamentals, types of energy, properties of thermodynamic media, the first and second laws of thermodynamics, the ideal gas, thermodynamic processes, gas engine cycles, vapor power cycles, refrigeration, nozzles and jet propulsion, and mixtures. The more capable students study the fundamentals of heat transfer in lieu of certain reviews and examinations.

Laboratory. A correlation of theory and practice. The equipment used includes gasoline, diesel and fuel research engines, steam engines and turbines, air compressors, gas turbines, and refrigeration and air conditioning units. *4 Credit Hours.*

ME 302. FLUID MECHANICS

A study of the laws of mechanics as they apply to liquids, vapors, and gases. The course includes a study of fluid properties; principles of fluid statics; fluid flow concepts; impulse-momentum; viscous effects; closed conduit flow; boundary layer and basic drag concepts; dimensional analysis and dynamic similitude; flow measurements; open channel flow; aerodynamics with emphasis on lift, drag, flight stability, and shock effects in transonic and supersonic flight; compressible flow. The more capable students solve a special problem in lieu of certain reviews and examinations.

Laboratory. Practical exercises illustrating theory previously studied in the classroom. Equipment used includes pumps, turbines, flow measurement devices, pipe friction measurement devices, supersonic and subsonic wind tunnels, smoke tunnels, and a supersonic nozzle thrust stand. *4 Credit Hours.*

ME 303. ENGINEERING MECHANICS (*Either Term*)

The relationships between external effects and force systems for particles and rigid bodies are developed by vector mathematics as an engineering science. The statics portion of the course includes a study of equilibrium in two and three dimensions, centroids, distributed forces, analysis of trusses and frames, shear and bending moment diagrams, and friction. The dynamics portion of the course consists of a study of kinematics and kinetics for both particles and rigid bodies. Newton's Second Law, work-energy and impulse-momentum methods are used in particle dynamics. Dynamic analysis by Newton's Second

Law is taught for rigid bodies. Mechanical vibrations are introduced. *4 Credit Hours.*

Advanced Courses

ME 351. ADVANCED THERMODYNAMICS

Prerequisite: Demonstrated superior ability in chemistry and mathematics.

A more sophisticated coverage of the subject matter of ME 301 with the addition of such material as the Clausius inequality, mixtures of gases at different pressures and temperatures, reactive systems, heat transfer and fluid flow. Emphasis is placed on a rigorous mathematical approach of the First and Second Laws of Thermodynamics. *4 Credit Hours.*

ME 353. ADVANCED FLUID MECHANICS

Prerequisite: Demonstrated superior ability in Thermodynamics and Engineering Mechanics.

A vector-oriented coverage of the topics listed in ME 302, with emphasis on the theoretical and mathematical development of the general laws of fluid mechanics. A knowledge of vector algebra is assumed; however, the field operators of vector calculus are developed carefully and thoroughly.

Laboratory. Practical exercises illustrating theory developed in the classroom. Equipment available includes pumps, turbines, flow measurement devices, pipe friction measurement devices, supersonic, subsonic and smoke tunnels and a supersonic nozzle thrust stand. *4 Credit Hours.*

ME 353. ADVANCED ENGINEERING MECHANICS (Either Term)

Prerequisite: Demonstrated superior ability in physics and mathematics.

Coverage of the subject material of ME 303 is accelerated. Space trusses virtual work and stability are also included in statics. Dynamic analysis of rigid bodies by work-energy and impulse-momentum, system of particles, bodies of variable mass, general three-dimensional motion of a rigid body and damped and forced vibrations problems are added to the dynamics subject material of ME 303. *4 Credit Hours.*

Elective Courses

ME 384. MECHANICS OF MATERIALS (Second Term)

Prerequisite: ME 303.

This course develops the elastic and inelastic relationships between external forces (loads) acting on deformable bodies and the stresses and deformation produced. The study includes centric, torsional, flexural and combined loading, beam theory, column theory, and the influence of properties of materials. Laboratory exercises illustrating the above principles are conducted frequently throughout the course. *4 Credit Hours.*

Fluid Friction Experiment



ME 481. GAS DYNAMICS (First Term)

Prerequisites: ME 301, ME 302.

A coverage of the basic principles of fluid dynamics and thermodynamics to include both subsonic and supersonic compressible flow. Principal analysis is one-dimensional covering isentropic flow, normal shock waves, and flow with either friction or heat transfer. Introduction is made to two and three dimensional supersonic flow with a study of oblique shock waves and expansions, and conical shock waves. Application is provided through the use of subsonic and supersonic wind tunnels, a water table, and a design problem. *2.5 Credit Hours.*

ME 482. HEAT, MASS AND MOMENTUM TRANSFER (Second Term)

Prerequisites: ME 301, ME 302.

This course offers a unified treatment of transfer phenomena, emphasizing the similarities between heat, mass, and momentum transfer processes, where applicable. Included is a broad treatment of ablation, boiling, condensation, drying of solids, heat exchanger design, and radiation, including turbulent as well as laminar solutions. *2.5 Credit Hours.*

ME 483. SPACE MECHANICS (Either Term)

Prerequisite: PH 201.

An introduction to the trajectory problem of the space vehicle applying the principles of mechanics to the orbits of satellites and other bodies in space acted on by a central force system. The course includes a study of the bodies of the solar system, the development of Kepler's Laws of motion, the geometry of two-body conic orbits, principal coordinate systems, and astrodynamic constants. A brief consideration is made of the 3-body problem, the n-body problem, and several methods of orbit determination. The final portion of the course is a study of rendezvous, interception, and interplanetary orbits. *2.5 Credit Hours.*

ME 485. CONTINUUM MECHANICS (First Term)

Prerequisites: ME 301, ME 302, ME 303, MA 483.

This course forms a foundation for deeper study in special branches such as hydrodynamics, gas dynamics, elasticity and plasticity. Necessary concepts and theorems of tensor geometry are developed at the start. Study of state of stress, kinematics of instantaneous motion, the fundamental mass, momentum and energy theorems, and constitutive equations form the foundation. Applications to problems with perfect fluids, viscous fluids, plastic materials and elastic materials are included. *2.5 Credit Hours.*

ME 486. MECHANICAL VIBRATIONS (Second Term)

Prerequisite: ME 303.

This introductory course in vibrations provides the necessary background for continued development in this rapidly expanding field. Free, damped, and forced vibrations of the linear single degree of freedom system are covered in detail. Shock induced vibrations, shock spectrum analysis, and non-linear single degree of freedom systems including a study of phase-plane technique are presented. Multi-degree of freedom systems are studied with particular attention on matrix analysis, numerical methods and computer solutions. Analysis of continuous systems provides a vehicle for the discussion of differential equation, boundary value problems, and eigenvalue solutions. *2.5 Credit Hours.*

DEPARTMENT OF ORDNANCE

Professor: COL J.D. Billingsley (Head of Department).

Associate Professors: COL R. W. Samz; LTC M. J. Herbert.

Assistant Professors: MAJs K. E. Lager, S. L. Myers, J. J. Prentice, H. C. Puscheck, L. C. Ross, L. F. Skibbie.

Instructors: LTC K. E. Lockwood; MAJs J. A. Apperson, J. W. Cavender, W. F. Crews, S. R. Ely, D. L. Kouns, E. F. LaBorne, J. B. McGough, D. P. Tillar.

Laboratory Officer: CWO H. L. Killian.

Standard Course

OE 401-402. ORDNANCE ENGINEERING

Prerequisites: EL 301, 304; PH 303; ME 301, 302, 303.

This course is designed to give the cadet experience in the application of previously studied scientific and engineering principles to weapon systems. Coverage is given to sources of energy such as chemical, electrical, and nuclear types; ballistics including electronic computers, weapon system components, trajectories, flight stabilization, servomechanisms, guidance, fuzes, and terminal effects; propulsion including the rocket, gas turbine, spark and compression ignition engines, power transmission, engineering materials, land and air locomotion; weapon system design study including the development of parameters for and the analysis and design of a proposed new Army weapon system. Integrated laboratory exercises are included. *8 Credit Hours (4 each term).*

Honors Course

OE 451-452. HONORS COURSE IN ORDNANCE ENGINEERING

Prerequisites: Standing in top 10 percent of class. Permission of the Department.

The Honors Course for exceptionally capable cadets includes all topics listed for the standard course (OE 401-402). The cadet accelerates this study at a pace governed by his own individual capability. A minimum of one class per week is scheduled in lieu of regular class attendances. Teaching techniques normally used for graduate studies are employed, emphasizing individual study and research. The time gained is used to cover one or more advanced topics of cadet choice or an individual analytical and/or laboratory project, where approved. *8 Credit Hours (4 each term).*

Elective Courses

OE 385. MANAGEMENT ENGINEERING

Prerequisite: MA 202.

This course provides a comprehensive survey of quantitative methods in management. The purpose is to (1) introduce the analytical approach to command and management problems (2) develop a facility with certain modern techniques which aid decision making and (3) improve general managerial abilities. Emphasis is on problem solving from the systems viewpoint. The concepts and techniques developed include: schematic models, decision theory, theory of games, statistical control, linear programming, inventory control, Monte Carlo simulation, queueing theory, CPM and PERT. The course is pragmatic rather than rigorous and stresses methods

currently used in managing large organizations. An educational trip to a nearby industrial activity serves to relate classroom material to real world problems. *2.5 Credit Hours.*

OE 481. AUTOMOTIVE ENGINEERING (Either Term)

Prerequisites: ME 301, 302, 303. (ME 303 may be taken concurrently.)

An integrated engineering course designed to stress the engineering approach in the analysis of vehicular engineering systems. After an introduction to the problem of land mobility, the course covers the detailed analysis of powerplants with their associated auxiliary systems, as well as power train and chassis components. The course is climaxed by the investigation of vehicle performance in terms of acceleration, power and load capacity both on hard surface roads and in cross country operation. An integrated laboratory is designed to prove the theoretical analysis. Consideration is given to practical problems encountered by the U.S. Army in the field. *2.5 Credit Hours.*

OE 482. INDIVIDUAL ORDNANCE PROJECT (Second Term)

Prerequisites: OE 401 or OE 451 and permission of the Department.

The objective of the course is to permit advanced or specialized study of scientific principles applied in the field of Ordnance Engineering. Study may include either or both theoretical or laboratory effort based upon a sound preparatory investigation in mathematics and/or the basic sciences. Conduct of course will be on an individual or small group basis. Exact scope of study to be established by consultation between the cadet and the Professor of Ordnance. *2.5 Credit Hours.*

OE 483. ENGINEERING MATERIALS (First Term)

Prerequisites: CH 201-202; PH 303; ME 303.

The course provides an introduction to the properties and behavior of solid materials commonly used in engineering applications. Emphasis is placed on the structural and electronic characteristics which determine these properties. Coverage includes crystallography, atomic bonding and radii, solid solutions, equilibrium conditions and phase diagrams, rate reactions, elastic and plastic behavior, dislocation theory, thermal conductivity and specific heat, and the electrical conductivity of metals. Integrated laboratory periods include instruction in: x-ray diffraction, thermal analysis, metallurgical microscopy and specimen preparation, electron microscopy, photomicrography, and photographic darkroom techniques. *2.5 Credit Hours.*

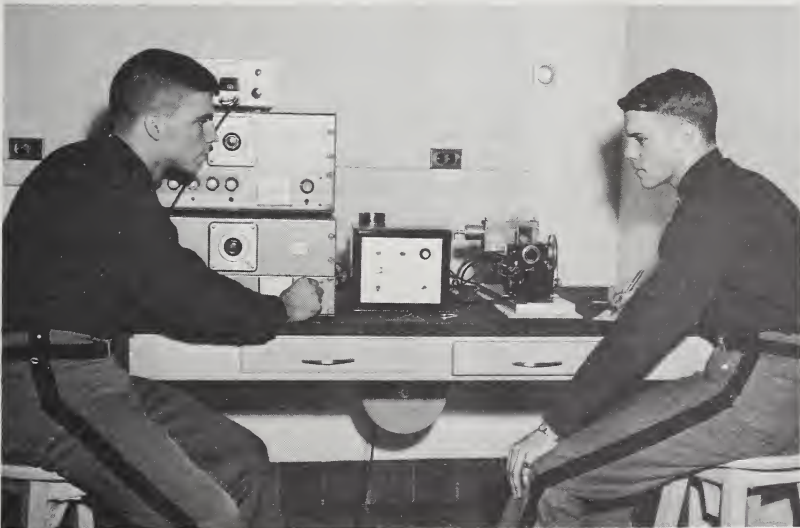
OE 487. Operations Research (Either Term)

Prerequisite: OE 385.

The Operations Research course develops in considerable depth those quantitative methods which are now well-established and routinely used to analyze and solve managerial-type problems. In addition, it expands on certain quantitative techniques for decision making introduced in OE 385, Management Engineering. The course is initiated with an overview of the decision-making process and a review of probability and statistics. After the introductory phase, the following topics are covered: (1) Sampling Theory, (2) Curve Fitting, (3) Monte Carlo Methods, (4) Inventory Theory, (5) Replacement Theory, (6) Reliability Theory, (7) Maintainability Theory, (8) Queueing Theory, (9) Competitive Strategies, (10) Allocation of Resources, (11) Dynamic Programming, and (12) Macrocombat Models. Emphasis is placed on problem identification, variable identification, word-to-mathematical model transformations, seeking optimum analytical solutions of these models, and verification of solutions. *2.5 Credit Hours.*



Individual Ordnance Project



Physics experiment, The Mossbauer Effect

DEPARTMENT OF PHYSICS

Professor: COL E. A. Saunders (Head of Department).

Associate Professors: LTCs D. Freed, L. E. Radford, M. G. Sheffield.

Assistant Professors: MAJs J. F. Baur, J. A. Bishop, H. L. Briggs, C. H. Carmean, W. A. Childs, W. T. Cooper, J. C. Ferguson, W. J. Garcia, J. P. Johnson III, F. W. Kulik, R. N. Mathis, R. R. Mills, R. Riordan, P. W. Tomiczek, D. B. Williams, J. S. Willis; CPT R. L. Hobson.

Instructors: MAJs E. J. Brady, D. V. Fowler, P. J. Kelly, C. E. Langseth, T. R. Mooney; CPTs B. J. Gronich, R. J. Nelson; 1LT P. W. Forbes.

Standard Courses

PH 201. PHYSICS I

Prerequisite: None.

The first semester in a three-semester sequence of general and modern physics. This semester is devoted primarily to the fundamentals of mechanics. A laboratory program designed to develop an appreciation of scientific techniques and to illustrate fundamental physical concepts is an integral part of the course. *4 Credit Hours.*

PH 202. PHYSICS II

Prerequisite: PHYSICS I.

The second semester in a three-semester sequence of general and modern physics. This semester is devoted primarily to the fundamentals of electricity, magnetism and optics. A laboratory program designed to develop an appreciation of scientific techniques and to illustrate fundamental physical concepts is an integral part of the course. *4 Credit Hours.*

PH 303. PHYSICS III

Prerequisites: PHYSICS I AND II.

The third semester in a three-semester sequence of general and modern physics. This semester is devoted primarily to the fundamentals of quantum physics as applied to atoms, molecules, solids and nuclei. A laboratory program designed to familiarize the student with radiation detection and counting devices is an integral part of the course. It includes experimental determination of decay constants and absorption coefficients. *4 Credit Hours.*

Advanced Courses

PH 251. ADVANCED PHYSICS I

Prerequisite: None.

The first semester in a three-semester sequence of advanced classical and modern physics for selected students. This semester is devoted to the study of mechanics of particles and finite bodies. Vector and scalar fields and the effects of special relativity are introduced. A laboratory program designed to develop an appreciation of scientific techniques and to illustrate fundamental physical concepts is an integral part of the course. A number of extended laboratory exercises of a more sophisticated nature are also required. *4 Credit Hours.*

PH 252. ADVANCED PHYSICS II

Prerequisite: PH 251. (Selected students from PH 201 may be permitted to take this course.)

The second semester in a three-semester sequence of advanced classical and modern physics for selected students. This semester is devoted to the study of electromagnetic phenomena and the laws of electromagnetism (Maxwell's equations). The basic principles of physical optics are introduced. The laboratory program of PH 251 illustrating fundamental principles (including extended laboratory exercises) is continued. *4 Credit Hours.*

PH 353. ADVANCED PHYSICS III

Prerequisites: PH 251 and 252. (Selected students from PH 201 and PH 202 may be permitted to take this course.)

The third semester in a three-semester sequence of advanced classical and modern physics for selected students. This semester is devoted primarily to the fundamentals of quantum physics as applied to atoms, molecules, solids and nuclei. The laboratory program of PH 251 and PH 252 is continued and includes radiation detection and counting devices, determination of decay constants and absorption coefficients. *4 Credit Hours.*

Elective Courses

PH 383. INTRODUCTION TO THEORETICAL PHYSICS I (First Term)

Prerequisite: MA 483 or permission of the Department.

A mathematical treatment of the fundamental laws, principles and concepts of classical mechanics including particle kinematics and dynamics, central force motion and scattering, rigid body motion and small oscillations using the Lagrangian formulation. An introduction to Hamiltonian mechanics is included. *2.5 Credit Hours.*

PH 384. INTRODUCTION TO THEORETICAL PHYSICS II (Second Term)

Prerequisite: MA 483 or permission of the Department.

An intermediate course in electricity and magnetism covering electrostatics, magnetic fields, electromagnetic induction, Maxwell's equations, Poynting vector, electromagnetic properties of material media, physical optics and special relativity to include the field transformation equations. *2.5 Credit Hours.*

PH 484. QUANTUM MECHANICS (First Term)

Prerequisite: PH 303 or PH 353.

An introductory course stressing the physical meaning of quantum theory to include: failure of classical theories; de Broglie waves, wave functions and eigenvalue problems; Schrodinger equation; free particle, potential well, harmonic oscillator, hydrogen atom; operators; many electron atoms, Pauli principle. *2.5 Credit Hours.*

PH 486. EXPERIMENTAL PHYSICS (Either Term)

Prerequisites: PH 303 or PH 353 and one elective in Physics.

Individual advanced laboratory experiments selected by the student and performed under the supervision of a faculty advisor. Possible experiments include: normal modes of coupled systems, laser optics, Frank-Hertz, electron

paramagnetic resonance, Zeeman effect, Mössbauer effect, mass spectroscopy and nuclear events. *2.5 Credit Hours.*

PH 487. NUCLEAR REACTOR THEORY (Either Term)

Prerequisite: PH 303 or PH 353.

A review of modern physics pertaining to reactor theory, radiation detection and health physics; neutron moderation; neutron cycle balance in homogeneous and heterogeneous systems; neutron diffusion; critical equation and critical size, short and long term transient effects, and stability. The laboratory portion of the course includes practical exercises in instrumentation and radiation detection; neutron activation and cross-section determination; thermal diffusion and Fermi age; flux distribution buckling and critical size of the subcritical reactor. *2.5 Credit Hours.*

PH 488. NUCLEAR PHYSICS (Second Term)

Prerequisite: PH 303 or PH 353.

A study of selected topics in nuclear physics to include: properties of the nucleus, radius, binding energy, angular momentum, magnetic moment, a quantum mechanical treatment of alpha decay and the deuteron; nuclear models, and basic nuclear reactions. *2.5 Credit Hours.*

PH 489. SPECIAL TOPICS IN PHYSICS (Either Term)

Prerequisite: PH 303 or PH 353, two electives in Physics, and permission of the Department Head.

Individually supervised research and study in a selected problem area.





DEPARTMENT OF SOCIAL SCIENCES

Professors: COL G. A. Lincoln (Head of Department) and COL. A. A. Jordan, Jr.

Associate Professors: LTCs R. E. Carignan, E. Denton, III, E. R. Heiberg, III; R. H. Nye; MAJ L. D. Olvey.

Assistant Professors: LTCs J. L. Morrison, Jr.; MAJs J. L. Abrahamson; W. S. Barge; J. O. Bradshaw; T. E. Carpenter, III; R. T. Chenoweth; M. J. Collins (USAF); P. M. Dawkins; W. S. deCamp; F. W. Hall, Jr.; F. A. Hart; W. L. Hauser; R. W. Hobbs; Dale E. Hruby; Jack R. Logan; Dana G. Mead; J. R. Murphy (USAF); W. E. Odom; R. J. Roller; J. O. B. Sewall; A. A. Smith; W. J. Taylor, Jr.; W. G. T. Tuttle, Jr.; CPTs A. E. Fowerbaugh; R. E. Johnston; J. R. Sisson.

Instructors: MAJs W. M. Burleson, Jr.; J. S. V. Edgar; R. L. Ernharth; T. P. Gorman; C. P. Hutton; K. L. Maher; M. Mooradian; J. C. Mumford; W. L. Schwartz; W. M. Summers; R. M. Weekley; CPTs R. J. Brown; C. L. Clark; C. A. Endress; K. J. Fedor; R. O. Freedman; N. W. Frische (USAF); W. C. Hendrix, III; F. A. Partlow, Jr.; 1LTs T. P. Goggin; S. K. Smith; B. L. Villa; Mr. R. D. Palmer (U.S. Foreign Service).

Standard Courses

SS 201. HISTORY OF EUROPE AND AMERICA: 1500-1870

This course combines a survey of the major developments in the history of Europe since the Renaissance and, by means of a seminar subcourse, a study in depth of one period or problem selected from the historical time-frame of the course. Events in America and in Asia are studied as they relate to European history. The course provides a foundation for further study of the institutions and issues of modern Western Civilization. The central thread is political history, to which economic, intellectual, and social developments are linked. *2.5 Credit Hours.*

SS 202. HISTORY OF EUROPE AND AMERICA SINCE 1870

This course combines a survey of the major developments in the history of Europe since 1870 and, by means of one or more seminar subcourses, a study in depth of

particular nations, period, or problems selected from the historical time-frame of the course. As in SS 201, the central thread is political history, to which economic, intellectual, and social developments are linked. Emphasis is on the increasing integration of the western community, its response to totalitarian pressures, and the influence of the Atlantic nations on the development of the contemporary global environment as well as the impact of this environment on that community of nations. *2.5 Credit Hours.*

SS 301. ECONOMIC PRINCIPLES AND PROBLEMS

A survey in basic economic principles providing for the application of these principles to specific problems of public policy in this and following courses. *2.5 Credit Hours.*

SS 302. UNITED STATES GOVERNMENT

A study of the dynamics of U.S. politics, with emphasis on the processes, institutions, and problems of the national government, and including a survey of the basic aspects of state and local government. This course provides a conceptual framework of political science for later courses. It also includes an integrated subcourse in Economics of National Security which is an extension of the public policy problems portion of Social Sciences 301. *2.5 Credit Hours.*

SS 401. COMPARATIVE POLITICAL SYSTEMS: EUROPE AND ASIA

A foundation of fundamental concepts of political science, particularly of comparative politics, and an analysis of various political systems of Europe (Great Britain, France, Germany, and the USSR) and Asia (China, India, and Japan). Emphasis is given to comparative analysis of political structures and to the functioning political system in democratic and non-democratic as well as modern and developing nations. The study of the Asian nations includes a survey of the nations' historical backgrounds. *4 Credit Hours.*

SS 407. INTERNATIONAL RELATIONS

An interdisciplinary study of the world environment, building upon previous Social Sciences courses, with particular emphasis upon the nature of the forces changing the relationships among nations in the post-World War II era and on the role of the United States in world affairs. The theories and practices of interstate behavior are studied as well as the basic influences which condition the formulation and execution of U.S. foreign policy. The course terminates with an intensive study of an area with emphasis on U.S. policy. *4 Credit Hours.*

Advanced Courses

SS 451. COMPARATIVE POLITICAL SYSTEMS: EUROPE AND ASIA ADVANCED—CHINA

Prerequisite: Standing in upper half of class in Social Sciences.

This advanced course is open to 60 cadets who stand in the upper half of their class in social sciences and who volunteer for the advanced course in lieu of the standard course. The first third of the course will survey the essential concepts of the standard course, while the latter two-thirds will explore in greater depth the history, economy, culture, political system, and international relations of Communist China. *4 Credit Hours.*

Elective Courses

SS. 381. HISTORY OF RUSSIA (Both Terms)

Prerequisite: None.

A study of the historical development of the Russian nation and its relations with the Western world, with particular emphasis on the nature of the Russian Revolution, the regime which it produced, and the Communist Bloc as it presents a challenge to the West. *2.5 Credit Hours.*

SS 382. HISTORY OF UNITED STATES FOREIGN RELATIONS (Both Terms)

Prerequisite: None.

A study of the history of America's relations with the world with emphasis on the period from the origins of the Spanish-American War to the current super power status. Those relations are examined in detail as the United States evolved from a fiercely isolationist nation to one with massive global commitments. The course focuses on the role of individuals in the formulation of national policy within the framework established by the Constitution, historical precedence and external events. The objectives are to gain a knowledge of the nature, origins, and development of foreign policy since America became a great power, provide a basis for examining and evaluating present policies, and diplomatic actions of the United States, and understand the role played by the armed forces in the formulation and execution of foreign policy. *2.5 Credit Hours.*

SS 383. MIDDLE EASTERN STUDIES (Second Terms)

Prerequisite: None.

An introduction to the problems of the contemporary Middle East and North Africa. A brief consideration of the development of the Arab and Ottoman Empires, the growth of Islam, and penetration of the area by European states provides the foundation for an intensive study of the national political goals, social problems, and economic prospects of the present day. *2.5 Credit Hours.*

SS 384. LATIN AMERICAN STUDIES (Both Terms)

Prerequisite: None.

This course presents a survey of contemporary developments in Latin America, interpreting these developments in terms of their historical roots. For the historical portion, emphasis is placed on the traditional cultures, the impact of Europe and the United States, and the emergence of the independent states. Contemporary problems and the dynamics of change are examined in terms of their social, economic and political aspects. The course concludes with a consideration of Inter-American regional progress and problems, United States-Latin American Relations, and Western Hemisphere security. *2.5 Credit Hours.*

SS 385. COMPARATIVE ECONOMIC SYSTEMS (First Terms)

Prerequisite: SS 301.

This course studies Capitalism, Socialism and Communism as economic systems. Their history, evolution and application today are studied with particular emphasis on the American and the Soviet bloc systems. *2.5 Credit Hours.*

SS 386. POLITICAL PHILOSOPHY (Both Terms)

Prerequisites: SS 201 and SS 202.

An introduction to the classic writings of Western political thought, emphasizing



the emergence of and challenges to the concept of constitutional government and the ethical values and other theory which underlie the political systems of the modern world. The course is concerned with the explanation and the understanding of important political ideas rather than the mechanics of the various political systems. Particular attention is paid to the universal applicability of the writings of the great philosophers and their relationship to the political problems of today. 2.5 *Credit Hours*.

SS 387. SEMINAR IN PUBLIC POLICY

Prerequisites: SS 301 and SS 302 or their equivalent (may be taken concurrently with SS 302), other cadets by special permission of the instructor.

This seminar affords cadets the opportunity to read and analyze in depth current national domestic policy issues. The course emphasizes independent reading and group discussion, with a focus on cadet papers leading to policy recommendations. Generally two interrelated topics will be selected each term on the basis of national concern, interest areas of cadets, and availability of material. Issues for 1967-68 will be selected from these issues:

1. Poverty: Dimensions and Solutions
2. The Negro in America: 1970
3. Elections, Parties, and Public Policy
4. Manpower for the Armed Forces
5. Problems of Urban Society

2.5 *Credit Hours*.

SS 481. SEMINAR IN HISTORY (Second Term)

Prerequisites: SS 201, SS 202. By permission of the instructor only.

A study of theories and methods used in historical analysis of man's developing institutions and ideas. The cadet reads representative works of eminent historians, studying their use of sources, interpretive philosophies, and styles. He then applies these ideas to an investigation of a suitable historical problem selected from the period of Western history under analysis by the Seminar. *2.5 Credit Hours.*

SS 482. ECONOMICS OF DEFENSE MANAGEMENT (Second Term)

Prerequisite: SS 301.

The course is a study of the economic determinants—prices, supply, demand—of decisions made by businesses and people (and now by the military establishment). The analytical methods have already been introduced in the standard economics course. *2.5 Credit Hours.*

SS 483. NATIONAL SECURITY SEMINAR (Both Terms)

Prerequisites: SS 301–302. This course may be taken concurrently with SS 302, and concurrently with SS 301 by the 2d classmen who have had SS 302.

This professionally oriented seminar examines selected major issues affecting the national security of the United States in the nuclear age. The primary focus of the seminar is toward *future* and *emerging* challenges to national security. Consequently it examines internal violence abroad, present and future; it evaluates the policy impact of international and local war; it addresses the evolving character of strategic nuclear deterrence and strategy; it outlines the threat and promise of the explosion of military technology; and discusses the impact of modern decision-making techniques upon the national security establishment and its policies. While including historical review as appropriate, the seminar is principally an analysis of U.S. strategy since the Second World War and a workshop on future U.S. policy. Visiting authorities, both civilian and military, conduct a variety of seminars and discussions. The course includes an educational trip to a nongovernmental institution engaged in research on problems of national strategy. *2.5 Credit Hours.*

SS 485. PROBLEMS OF DEVELOPING NATIONS (Both Terms)

Prerequisites: SS 201, SS 202, SS 301, SS 302. This course may be taken concurrently with SS 302.

A study of the problems of political modernization, nation-building, and economic development in selected nations of Southeast Asia and Sub-Saharan Africa. The course focuses upon the study of those conditions which are conducive to political stability and economic growth as well as those which tend to give rise to revolutionary change. Such problem areas as the development of nationalist movements, the role of foreign economic assistance, the bases of insurgency, the strategies of local Communist parties and the emerging roles of the military and other institutions are analyzed. Cadets also have opportunities to discuss these developing areas with citizens of the nations concerned and with experts in the field. *2.5 Credit Hours.*

SS 487. SEMINAR IN PUBLIC POLICY (First Term)

Prerequisite: SS 387. By permission of the instructor only.

This seminar affords selected cadets the opportunity to research on a continuous basis in selected problems of public policy. *2.5 Credit Hours.*

OFFICE OF MILITARY PSYCHOLOGY AND LEADERSHIP

Director: COL S. H. Hays.

Associate Professor: LTC P. J. Hickey.

Assistant Professors: LTCs W. H. Eisenhart, T. A. Rehm, R. T. Zargan; MAJs Q. C. Snyder, T. J. Tobin, H. C. Walters, Jr.

Assistant Director: MAJ J. C. Burris.

Instructors: MAJs P. M. Bons, J. J. Cortez, D. J. Erickson, W. L. Golden, N. S. H. Krawciw, R. M. Macedonia, J. B. Mallonee, R. H. Marcrum, J. E. Martling, R. A. Nadal, V. B. Sones, N. A. Ste Marie; CPT T. B. Throckmorton.

PL 202. GENERAL PSYCHOLOGY

Prerequisite: None.

A general psychology course designed to give the cadet a scientific basis for understanding human behavior. Basic concepts of general psychology are studied with emphasis on those concepts which relate to his future role as a military leader. The course considers human development and individual differences, perception, learning, thinking, motivation and emotion, adjustment, personality, social relationships, leadership and applied psychology. *2.5 Credit Hours.*

PL 252. ADVANCED GENERAL PSYCHOLOGY

Prerequisite: None.

A general psychology course designed to give selected cadets a broader and more comprehensive knowledge of psychology than is offered in PL 202, General Psychology. Basic concepts of general psychology are studied with emphasis on the concepts which relate to the cadet's future role as a military leader. A laboratory program designed to develop an understanding of the scientific methodology used by the behavioral sciences and to expose cadets to some of the current research being conducted in the field of psychology is an integral part of the course. *2.5 Credit Hours.*

PL 401. MILITARY LEADERSHIP

Prerequisite: PL 202 or validation.

An interdisciplinary approach to the study of leadership as a phenomenon of human behavior. The course is concerned with a consideration of the behavioral science factors which affect leadership and the process involved in its exercise by military commanders. The concept employed recognizes the moral, philosophical, and behavior foundations of military leadership and views the process as a dynamic interaction involving the leader himself (with his own personality), the group (with its particular characteristics and needs), and the situation (in which the leader and his group are operating).

In classroom exercises the cadet analyzes military leadership situations requiring an appreciation of human relations, group dynamics, and a knowledge of the functions of military management. Other instructional techniques include group discussion, role playing, the use of films, audio tapes and closed-circuit TV and oral and written reports on group and individually assigned projects. Guest seminar moderators noted for their contributions as scholars or practitioners in their field of leadership supplement this classroom instruction, and lectures by prominent military leaders provide practical illustrations of the successful applications of leadership. *2.5 Credit Hours.*



Role play in Leadership

PL 201. METHODS OF INSTRUCTION

Third Class.

A training course in the personal and professional qualifications required of a military instructor. Emphasis is placed on practical application in supervised presentations by each cadet of a military lesson, critiques, impromptu presentations, and a 30-minute outdoor class on a military skill (conducted during second class summer training). Included are theoretical instruction and practical application of the principles of learning and training methods. This course includes preparation, presentation, communication of information and skills, purposes and types of examinations, conduct of critiques, management and supervision of instruction and selection and design of training aids.

PL 481. MANAGERIAL PSYCHOLOGY

Prerequisite: PL 202 or validation.

A course of study dealing with the problems and techniques of management in dealing with people. While the course places emphasis on the industrial organization, military, government, and other institutions are covered as well. The physical structure and psychological climate of the organizations are analyzed as well as special groups, social interaction, and personal adjustment of people. The latter portion of the course requires the student to evaluate several case studies in human relations and in the practical application of previously learned theoretical concepts and principles. A term paper involving some aspect of human relations problems is required. *2.5 Credit Hours.*

PL 482. SOCIOLOGY: SOCIETY AND CULTURE

Prerequisite: PL 202 or validation.

This elective is an introduction to Sociology as a discipline. The objective of the course is to provide the perspective and the basic concepts for the analysis

of contemporary societies and cultures—American and others. The structure, function and dynamics of groups, organizations and institutions are examined in terms of social regularities and cultural differences. The course covers socialization, social stratification, ecology, population study, bureaucracy and social change. Material from Sociology and Anthropology is included. *2.5 Credit Hours.*

PL 484. AMERICAN MILITARY INSTITUTIONS AND MANPOWER

Prerequisite: PL 202 (Open to 1st and 2d Class only).

The Armed Forces of the United States are studied against a background of cultural and social change as functional institutions in American society. The interrelationships and impact of their roles, organization and methods on the economic, political and social structures of American democracy are examined in detail. Distinctive cultural features such as techniques of organization and control, status systems, and educational systems are identified. Stress is placed on changes in roles and relationships which result from external forces. Human resources available for military service are analyzed in terms of population trends, recruitment methods and organizational factors. Related topics include the effects of changing strategies and weapons systems, the influence of scientific research and development, mechanisms and effects of civilian control, management systems, career patterns, and military attitudes and goals. The course is focused on the contemporary military structure and is sociological in orientation. *2.5 Credit Hours.*

PL 485. INDEPENDENT BEHAVIORAL SCIENCE RESEARCH

Prerequisites: PL 481, PL 482 and departmental approval.

This course offers the cadet an opportunity to explore in depth a specific topic in behavioral science or personnel management. After an initial phase of group instruction in research methodology and resources, each cadet will be assigned an MP&L instructor as a project monitor and faculty advisor, under whose guidance the cadet will select and define his thesis, explore the background resources available, formulate a research design, and collect material. The cadet will consult with his advisor as desired or directed. Successful completion of the course will include the preparation of a research paper. *2.5 Credit Hours.*





Academic Computer Center

ACADEMIC COMPUTER CENTER

Associate Director for Computers: MAJ John R. Parker

The Academic Computer Center, an academic facility of the Office of the Dean, supports all academic departments and activities. The normal functions of the Center include conduct of instruction for cadet classes, as well as USMA Staff and Faculty courses; coordination of the overall Academic Computer Program; operation of the computing facility and reference library; and technical consultation with students and instructors. The Academic Computer Center trains instructors, assists academic departments in the actual conduct of instruction, provides a wide variety of instructor support and augmentation, monitors cadet special projects, and conducts research in the area of computer science education. Over 150,000 cadet program solutions were processed last academic year, and each month this year the number of problems significantly exceeded the corresponding month last year.

The Academic Computer Center is located in Thayer Hall and consists of three modern computers, a communications processor, and three classrooms designed specifically to support cadet instruction. It operates 15 remote terminals (teletype-writers) in a time-sharing system which was locally developed and optimized to allow the computer's problem-solving and data reduction capabilities to be brought into conventional classrooms, laboratories and lecture halls located considerable distances from the Computer Center. These terminals are moved from location to location as instructional needs dictate. When not otherwise in use, they are available to cadets and instructors for individual problem solving. The Center also uses closed circuit television and a wide variety of audio-visual aids, including a curve plotter and punched card equipment, to make instruction more effective.

The Center is open for cadet use 96 hours per week. Cadets who desire to operate the equipment individually may progress through a system of qualification which includes the award of appropriate qualification cards (gray or gold) and intermediate apprentice levels. Cadets who hold an unrestricted "Gold" Card (the highest qualification) may use the computer without supervision and when the Academic Computer Center would otherwise be closed.

USMA has an interdisciplinary Academic Computer Program designed to accomplish three major goals which are briefly stated as follows:

1. To acquaint each cadet with the capabilities, limitations, and potential of the computer as an increasingly important military tool.
2. To equip each cadet with the ability to perform complex computations rapidly and accurately through intelligent use of the computer.
3. To increase the effectiveness of instructors through judicious use of the computer in a variety of academic disciplines and in many classroom and laboratory situations.

Most cadet instruction in the operation and programming of digital computers occurs during freshman year in courses taught by the Departments of ES&GS and Mathematics. Each cadet receives instruction in programming computers in two languages. The first of these is a machine-oriented language specifically designed to support instruction at USMA. The second is a procedure-oriented language called CADETRAN (a dialect of FORTRAN II). It is during freshman year that the cadet learns to operate the computer itself to gain that intellectual impact which results from personal contact with the equipment. In Mathematics, the freshman cadet begins a series of 5 computer problems, which emphasize fundamental mathematical concepts. The basic knowledge is extended through continued computer use in several disciplines. The Departments of Physics and Chemistry use the computer as a data reduction tool. The Department of Ordnance includes comparison of analog and digital computer solutions in its Ordnance Engineering and Management courses. The Departments of Electricity, Mechanics, and Military Art and Engineering encourage cadet computer use. Several elective courses allow cadets with particular aptitude, skill, and desire to explore computer science in depth.

The use of the computer extends into areas outside of the sciences, such as psychology, tactics, and social sciences. For example, computer-trained cadets have programmed judge selection procedure and selection and matching of teams for the National Debate Tournament. Other cadets have written Social Science term papers on such topics as analysis of voting trends and stock market pattern analysis, using the results of computer analysis of large volumes of data as a starting point in the logical development of their basic thesis.

Major emphasis is given to using the computer as an in-class instructional tool in teaching noncomputer subjects.



INSTRUCTIONAL TELEVISION CENTER

Associate Director for Television: Maj. Billy R. Lawson

The United States Military Academy has become widely known for its innovations in educational techniques, and its use of educational resources. One of the newest educational tools to become part of the West Point scene is closed-circuit instructional television. The Instructional Television Center, an activity of the Office of the Dean, is located in Thayer Hall on the first floor. At the Military Academy, instructional television is used as an adjunct to the classroom instructor, and the instructors of the various departments are developing many new and original methods of using television in a way that integrates its capabilities into our time-tested methods of instruction.

Facilities of the Instructional Television Center include a modern well-equipped studio and control room. Principal items of equipment include four studio vidicon cameras, four professional video tape recorders, a slide and film chain for projection of 16mm motion pictures and 35mm slides, and the associated technical and test equipment. A distribution system of cables and the necessary amplifiers carry the instructional programs into over 200 classrooms—all of the classrooms in Thayer Hall and Bartlett Hall—and to the Library and Hospital. Large screen projected television is available in two large auditoriums in Thayer Hall and in two large lecture halls in Bartlett Hall. The distribution system will be extended to Washington Hall, the new gymnasium, the new cadet barracks study rooms, and other new buildings as they are constructed.

As a complement to the studio, which allows the production of professional quality instruction programs, the Center also operates a Candid Classroom, which is designed to permit candid videotaped recordings of classes conducted therein. This room is especially useful for instructor self-critiques and for cadet projects of various types, and the cadets themselves may operate the television equipment in the Candid Classroom.

THE LIBRARY

Librarian, USMA: Mr. Egon A. Weiss

Assistant Librarian: Mr. William G. Kerr

Chief, Readers' Services Division: Miss Ann K. Harlow

Reference Librarians: Miss Martha N. Beck (Social Sciences)
Mr. Edward I. Campbell (Audio-Visual)
Miss Irene Feith (Government Documents)
Miss Martha Earl (Periodicals)
Miss Mary E. Lassanyi (Science)
Mrs. Elizabeth M. Lewis (Fine Arts)
Miss Margaret Perry (Circulation)
Mrs. Marilyn Smith (Bibliography)

Chief, Special Collections Division: Mr. J. Thomas Russell

Archivist: Mr. Joseph M. O'Donnell

Assistant Archivist: Mr. Kenneth Rapp

Catalog Librarian: Mrs. Darla Daggit

Acting Chief, Technical Services and Acquisitions: Miss Anna E. Pierce

Order Librarian: Miss Catherine T. McGuinn

Catalog Librarians: Mr. Pingkun Lee
Miss Donna M. Spaulding
Miss Miriam E. Thompson
Miss Marion B. Wellar

The library book collection contains approximately 270,000 volumes. The library building has a storage capacity for 500,000 volumes and provides seating for over 1,000 readers. Current subscriptions include 1200 periodicals and 40 newspapers, domestic and foreign. Microfilm and microcard readers and printers are available in sufficient number to make possible effective use of the library's expanding microfilm holdings. The audio-visual resources include approximately 3,000 disc records and tapes of linguistic materials, drama, poetry, classical and popular music. Audio booths are equipped for stereophonic listening and recording. In addition, visual materials are available in form of prints, slides, drawings and mounted and unmounted pictures.

The library is designated a partial depository for the publications of the United States Government. United Nations, NATO, SEATO and regional publications are housed in the documents room of the library.

The library book collection represents the first federal library and antedates the founding of the Academy in 1802 by almost a quarter of a century. The first substantial acquisitions for the library were made between 1815 and 1817 when Major Sylvanus Thayer, Superintendent USMA, 1817-1833 on an official journey to Europe, was authorized by Secretary of War James Monroe to purchase landmark texts in the arts and sciences. Major Thayer obtained about 1,000 volumes

which formed the basis for early engineering education in the United States.

The present library resources are similar to those of a liberal arts college and reflect considerable strength in the mathematical, scientific, and technical subjects. The library's extensive holdings in the areas of military art, history and technology have established its reputation as an important military research library.

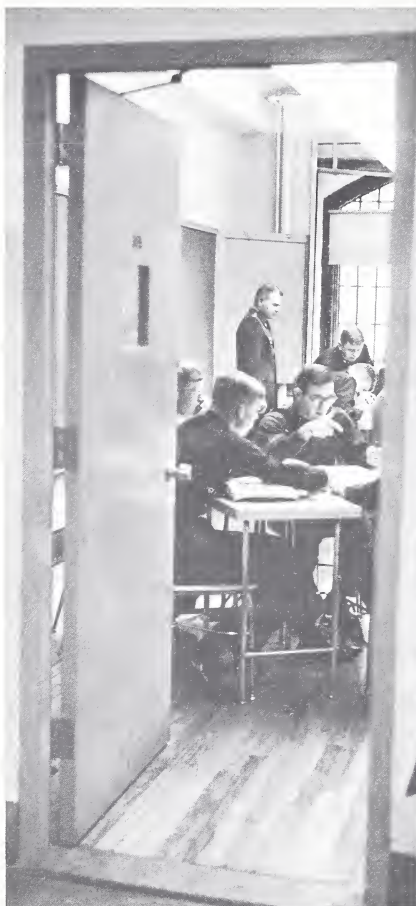
The USMA Archives maintains cadet and the Military Academy's administrative records. The library's Special Collections include extensive manuscript and archival holdings which are concerned primarily,



The Library

though by no means exclusively, with the history of the United States Army, the Military Academy and persons of the military profession. The collections of early American military art imprints is unique.

Cadets have free access to the library stack areas; oral and written instructions guide them in the use of catalogs, bibliographies and other reference resources. The facilities of the library are also available to individuals engaged in research. During the Academic Year the library is open from 7:00 A.M. on weekdays and from 2:00 P.M. to 10:00 P.M. Sundays. The Special Collections Division, including the USMA Archives, is open from 8:00 A.M. to 4:30 P.M. Monday through Friday.



Military Program

MISSION

To develop the qualities and attributes of leadership with emphasis on character as exemplified by integrity, morality, discipline and a strong sense of duty and responsibility.

To provide a broad basic military education.

To develop high standards of physical fitness.

To instill the motivation essential to the profession of arms and to provide orientation for a career in the United States Army.

Military instruction concentrates on the fundamental concepts of tactics, study of leadership techniques, training in physical education, and indoctrination in career planning and motivation. It provides study, practice and orientation in the history, materiel, methods, and techniques of the Army and the other services of the Armed Forces of the United States. With this background the graduate has the foundation necessary for his progressive and continued development throughout his career as an officer of the Regular Army.

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THE UNITED STATES CORPS OF CADETS

Organization

The student body at West Point is called the United States Corps of Cadets. The approximately 3,400 cadets of the Corps are organized into a brigade of four regiments. A cadet regiment consists of two battalions containing four companies, for a total of 32 companies in the brigade. Cadets of all four classes are assigned to each company, giving each company a strength of approximately 105 cadets.

The officer and senior noncommissioned officer positions within the cadet brigade are filled by cadets selected from the First (senior) Class. In command of the brigade is the Cadet Brigade Commander (Cadet First Captain) who has a staff consisting of a Brigade Executive Officer, a Brigade Adjutant, a Brigade Operations Officer, a Brigade Supply Officer, and a Brigade Activities Officer. The four cadet regimental commanders and eight cadet battalion commanders have staffs similar to that of the Brigade Commander. A cadet company commander is in charge of each company with subordinate cadet officers and noncommissioned officers in charge of smaller units.

Pay and Allowances

Cadets are members of the Regular Army and receive one-half of the basic pay of a Second Lieutenant with under two cumulative year's service. This, under current pay rate, is \$1,926.00 per year, from which they must pay for their uniforms, textbooks, and incidentals. Quarters, rations, and medical care are provided. The pay and allowances received are adequate to cover all expenses.

Appointment Upon Graduation

When a cadet has completed the course of instruction and meets

required standards, he is, upon graduation, appointed a Second Lieutenant in the Regular Army of the United States.

APTITUDE FOR THE SERVICE

The Aptitude for the Service System functions in accord with the basic responsibility of the Academy to produce officer leaders for the Armed Forces. The system assists in the maximum development of the leadership capabilities of each cadet and insures that graduates meet the standards required by the Army. The procedures of the system provide for evaluation of the leadership potential of each cadet, counseling and guidance in those areas in which any weakness is detected, and separation of any cadet who proves incapable of achieving the required standard of leadership.

The evaluation of cadet leadership is accomplished primarily through a program of ratings by officers and cadets. Underclass cadets are rated semi-annually in November and April. The First Class is rated annually. Each cadet rates all cadets in his company who are in his class or lower classes. The ratings are made by arranging the cadets in each class within the company in order of merit based on observation of leadership ability.

In addition to the ratings by other cadets, each cadet is similarly rated by his Company Tactical Officer. The rating by the Tactical Officer is an extremely important one since this officer has been carefully selected for his job based on his proven leadership ability. It is he who has studied the manner of performance of each cadet in the company and has counseled and advised them.

A relative standing in Aptitude for the Service for each cadet is established by mathematically combining the ratings of the Tactical Officer and cadets. The cadet standings are not published, but the cadet and his parents are informed of his general ranking within the class. The objective ratings are supplemented in certain instances by descriptive comments regarding performance of specific duties and overall potential.

The Tactical Officer plays a key role in the counseling and guidance phase of the system. He conducts a series of interviews with each cadet in which he discusses any observed shortcomings, along with their probable cause, and counsels him in the means of improvement.

If over an extended period of time the cadet appears incapable of overcoming his deficiency and attaining the leadership standards required, his records are carefully studied by a board of senior officers of the Department of Tactics. The board interviews the cadet and such other cadets and officers as necessary for a thorough evaluation of the case.

The board may recommend that a cadet be declared proficient or deficient. The Commandant reviews the proceedings of the Aptitude Board and refers those cases involving deficiency to the Superintendent for action by the Academic Board where they are handled in the same manner as deficiency in an academic subject. A cadet found deficient in Aptitude for the Service by the Academic Board may be placed in a conditioned status until the next rating or he may be separated. All cases involving separation are referred to the Department of the Army for final approval.

Deficiency in Aptitude for the Service does not mean that a young man is unsuited for a successful career in life. It does mean that in the considered opinion of his officer supervisors and his fellow cadets he is not suited for a career as an officer of the Army.

TYPICAL DAILY SCHEDULE

Morning:

6:00	Reveille
6:30- 7:10	Breakfast
7:45-11:50	Class or study
12:10-12:50	Dinner

Afternoon:

1:05- 2:05	Class or study
2:15- 3:15	Class or study
3:35- 4:50	Intramural or intercollegiate athletics
4:50- 6:30	Study time, parades, intercollegiate athletics or extracurricular activities
6:15- 7:00	Supper
7:20- 9:35	Study time
10:00	Taps. Late lights authorized for study purposes.

The schedule shown above is a typical daily schedule for a cadet during the academic year, September through May. Cadets also attend classes on Saturday morning. During the summer months, June through July, cadets take leave for approximately one month and devote the remaining time to military training.

DEPARTMENT OF TACTICS

Commandant of Cadets: Brigadier General B. W. Rogers

Aide-de-Camp: Captain R. I. Paske

Deputy Commandant: Colonel A. J. Hughes

Brigade Staff: S1: Lt Colonel R. G. VanderMeer

Operations Officer: Lt Colonel J. C. Donovan

S4: Lt Colonel R. A. Shackleton

Cadet Activities Officer: Lt Colonel D. D. Peifer

Commanding Officer, First Regiment: Colonel W. J. Love

Commanding Officer, Second Regiment: Lt Colonel M. D. Howell

Commanding Officer, Third Regiment: Colonel A. M. Haig

Commanding Officer, Fourth Regiment: Colonel C. M. Simpson

OFFICES OF INSTRUCTION

OFFICE OF MILITARY INSTRUCTION

Director: COL H. F. T. Hoffman, Jr., *Deputy Director:* LTC R. C. Diehl

Career Branch: Acting Chief: LTC W. D. Renner; Sr Armor Instr: MAJ J. Mason; Sr Arty Instr: MAJ J. H. Oakes; Sr Engr Instr: MAJ T. G. Horst; Sr Inf Instr: MAJ G. G. Chikalla; Sr Signal Instr: LTC W. D. Renner; Instructors: MAJ H. D. Penzler; MAJ C. A. Teague; CPT W. D. Robertson

Military Science Branch: Chief: MAJ R. A. Rachek; Instructors: MAJ M. K. Sheridan, USMC; MAJ J. G. deCordova, British Army; MAJ R. E. Thomas; MAJ R. G. Moscatelli; MAJ R. T. Hatcher; MAJ J. W. Ray; MAJ A. M. Harris; MAJ D. R. Davis

Plans Branch: Plans Officer: MAJ W. T. Parks; Asst Plans Officer: MAJ R. E. Conroy; CPT J. W. Hutchison

FOURTH CLASS MILITARY INSTRUCTION

Summer

FOURTH CLASS SUMMER TRAINING

The summer period consists of basic military training in preparation for military life and orientation and indoctrination in duty and honor. The period in New Cadet Barracks is one of intensive fundamental military training to include qualification with the U.S. Army rifle and basic individual training designed to prepare the new cadet to take his place in the Corps when it reassembles late in August. *7.5 Weeks. Ungraded.**

*Satisfactory completion is a prerequisite for receiving full credit for Academic Year instruction.

MILITARY SCIENCE I

MI 101. FUNDAMENTALS OF MILITARY SCIENCE

Instruction in tactical principles as applied to platoon level operations to include military organization, small unit tactics, and troop leading procedures. *.5 Credit Hour.*

MI 102. MAP READING

Instruction in the basic techniques of map reading. *1 Credit Hour.*

MI 105. MILITARY HERITAGE

Instruction designed to develop in the cadet an appreciation of the history and traditions of the profession of arms and to instill a pride in that profession, and secondarily, to broaden his cultural background in military art. *1 Credit Hour.*

CAREER TRAINING

MI 103. CAREER I

Orientation of the four year military training program: combat and service orientations to broaden the military background of the Fourth Classman. *Ungraded.*

THIRD CLASS MILITARY INSTRUCTION

Summer

THIRD CLASS SUMMER TRAINING

To enhance soldier skills in adjustment of indirect fire, marches, fieldcraft, communications, land navigation, first aid, mountaineering, hand to hand combat, survival and individual protective measures against chemical, biological and radiological attacks; to provide familiarity with the mission, organization and employment of the infantry, mechanized infantry, tank and armored cavalry platoons, to include firing of weapons organic to the maneuver battalion and small unit tactics at squad, section and platoon level in both daylight and night operations: to provide orienta-





tion on the combat support role of the Field Artillery Battery, the Combat Engineer Company, and the Communications Platoon; to provide an orientation on the characteristics and planning of airmobile operations; to provide high standards of physical conditioning, appearance, discipline, self-confidence and esprit; to provide leadership experience through troop leading in a simulated combat environment; and to provide complete understanding of the individual moral obligations of a member of the U.S. Army. *7.5 Weeks. Ungraded.**

Academic Year

MILITARY SCIENCE II

MI 201. FUNDAMENTALS OF MILITARY SCIENCE

Instruction in tactics as applied to company and Combined Arms Team level operations to include organization for combat, offense, defense, and troop leading procedures. *1.5 Credit Hours.*

CAREER TRAINING

MI 202. ARMY INDOCTRINATION AND MOTIVATION

A series of conferences and seminars designed to broaden the military background of the Third Classman, to acquaint him with the Army way of life, and to familiarize him with the policies for career development and utilization of commissioned officers in the U.S. Army. *Ungraded.*

SECOND CLASS MILITARY INSTRUCTION

Summer

SECOND CLASS SUMMER TRAINING

(1) A period during which the cadet receives orientation on the roles, missions, and organization of other services; practical application of methods-of-instruction training to include physical training, instructor techniques, small arms refresher training, and a review of land navigation techniques, *2.5 Weeks. Ungraded.**

(2) Duty as a platoon leader with a combat unit of the U.S. Army, or as a squad leader during New Cadet Barracks. *1 Month. Ungraded.**

*Satisfactory completion is a prerequisite for receiving full credit for Academic Year instruction.

Academic Year

MILITARY SCIENCE III

MI 301. FUNDAMENTALS OF MILITARY SCIENCE

Tactical instruction in the organization and basic principles of offensive and defensive combat employed by the ROAD Battalion and Combined Arms Task Force. *1.5 Credit Hours.*

MI 302. FUNDAMENTALS OF MILITARY SCIENCE

Instruction in the basic principles of employing the ROAD Battalion Combined Arms Task Force in special operations on the nuclear and nonnuclear battlefield to include airborne, airmobile, and river crossing operations. *1 Credit Hour.*

CAREER TRAINING

MI 304. CAREER III

An introduction to career planning to include the challenge of the profession of arms, career benefits, and branch selection considerations. *Ungraded.*

FIRST CLASS MILITARY INSTRUCTION

Summer

FIRST CLASS SUMMER TRAINING

(1) To provide an orientation on the roles, tactics, techniques, equipment, and new developments in Infantry, Armor, Artillery, Signal, and Engineers through an orientation trip to selected military posts. *2.5 Weeks. Ungraded.**

(2) Duty either as a platoon leader with a combat unit of the U.S. Army for cadets who did not receive this type training in Second Class Year, or at command and staff levels during New Cadet Barracks or Camp Buckner. *1 Month. Ungraded.**

Academic Year

MILITARY SCIENCE IV

MI 401. THE U.S. ARMY IN THE COLD WAR

Instruction in the roles, missions, and current employment of the Army in stability operations, with emphasis on battalion and company operations in counter-guerrilla tactics. *1 Credit Hour.*

CAREER TRAINING

MI 400. CAREER IV

Guidance on personal affairs and career planning designed to assist in making the transition from cadet to junior officer. To prepare the cadet for his immediate decisions concerning branch selection, uniforms, automobile purchasing, travel, and the first duty station. *Ungraded.*

MI 402. BRANCH TRAINING

Branch-oriented instruction designed to assist in preparing the cadet to assume the duties of a junior officer in his first unit. *.5 Credit Hour.*



OFFICE OF PHYSICAL EDUCATION

Professor and Director: COL F. J. Kobes, Jr.

Deputy Director: LTC W. R. Gossett

S1: MAJ B. B. McDonough

Coordinator of Instruction: MAJ W. J. Weafer

S4: LTC R. J. Herte, Jr.

Building and Grounds: MAJ W. D. Mead, LT S. G. Truesdell

Associate Directors: MAJ C. J. Garvey, DR. L. O. Appleton, Messrs. J. B. Kress, H. J. Kroeten, R. E. Sorge

Assistant Directors: Messrs. L. A. Alitz, W. F. Lewis, G. W. Linck, J. M. Palone, M. A. Johnson

Instructors: LTC M. A. Clapp, MAJ's J. L. Anderson, J. J. Burcham, R. Degen, M. D. Isacco, C. R. Johnson, J. A. Keutmann, O. L. Langford, T. J. Mortensen, R. G. Ziegler, CPT's R. D. Clarke, G. H. Williams, LT's H. A. Friedman, D. M. Parker, Mr. H. J. Veix, SP5 R. Hoch, SP4's H. S. Fitzgibbon, J. W. Sauve, PFC R. W. Taylor

Trainer: Mr. G. S. Parcel

Physical Education courses are designed to increase muscular strength, power, endurance, cardiovascular endurance, fundamental coordination, balance and flexibility; to enhance mental health and efficiency; and to develop the personal requisities necessary for military effectiveness and leadership.

Standard Courses

PE 101-102. FOUNDATIONS IN PHYSICAL EDUCATION

This course emphasizes the development of basic physical ability through instructional participation in boxing, gymnastics, swimming and wrestling interspersed with lectures on applied physiology. Instruction is provided in the carry-over sports of golf and tennis. Accelerated students participate in handball and squash. Standards of physical performance must be met. *3 Credit Hours.*

PE 201-202. SPORTS ORIENTATION

The objective of this course is to provide basic instruction in carryover sports skills, to improve physical development and to prepare for leadership in physical training. It includes instruction and experience in conducting conditioning exercises and allied physical training activities. Standards of physical performance must be met. *1.5 Credit Hours.*

PE 301-302. SPORTS LEADERSHIP

This course places emphasis on leadership instruction and experience. Further instruction is given in sports skills, instructor preparation, coaching techniques and athletic coaching experiences. Standards of physical performance must be met. *1.5 Credit Hours.*

PE 401-402. ADVANCED SPORTS LEADERSHIP AND ATHLETIC SKILLS

The objective of this course is the development of instructor and leadership training through the administration of third and fourth class summer physical training program. Instruction for the further expansion of the individual repertory of individual and team sports is provided. Emphasis is placed on carryover athletic skills which promote physical fitness. Standards of physical performance must be met. *1 Credit Hour.*

Additional Courses

INDIVIDUAL INSTRUCTION

Special program of instruction in weight control, reconditioning, basic swimming, posture, corrective exercise and physical conditioning to assist those who experience difficulty in achieving minimum standards of proficiency. Open to all classes.

INTRAMURAL ATHLETIC PARTICIPATION

The intramural athletic program is scheduled in three seasons, fall, winter, and spring. Cadets not on intercollegiate teams are required to participate under PE 101-102, 201-202, 301-302, and 401-402. The program consists of nineteen sports consistent with physical education objectives to provide broad sports experience, to promote physical activity and to provide leadership experience in athletics.

ANNUAL PHYSICAL FITNESS TESTS

Physical Fitness Tests, Physical Ability Tests, Obstacle Course Runs and Physical Combat Proficiency Tests are conducted in the fall and spring of each year. Performances are graded under PE 101-102, 201-202, 301-302, and 401-402.

Lecture Program 1967-68

Lectures sponsored by the various activities at the Military Academy are coordinated by the Dean of the Academic Board. In almost every case the Lecture is an integral part of the course of instruction of the attending class or classes.

The following is a representative grouping of lectures presented to the Corps of Cadets under the sponsorship of the Departments of Instruction indicated.

DEPARTMENT OF ELECTRICITY

Brigadier General T. M. Rienzi, CG, USARSCS, Ft. Monmouth, New Jersey, "Communications—Electronics in the Army."

DEPARTMENT OF ENGLISH

Dr. Roland M. Frye, University of Pennsylvania, "Shakespearean Theater and Actors."

John Fischer, Contributing Editor, Harpers Magazine, "Panel Discussion on Effective Writing."

Brigadier General S. L. A. Marshall, Military Historian, "Military Research."

MAJ Gilbert Amelio, USAF, "The Face of Christ."

Howard Nemerov, Bennington College, "Poetry and the Military Officer."

Dr. J. Fletcher, Episcopal Theological School, "Situation Ethics."

Ambassador Henry Cabot Lodge, "Panel Discussion of American Ethics Since Korea."

DEPARTMENT OF LAW

Colonel Edward Haughney, Chief International Affairs, Division OJAG, "Regulation of War."

Carl A. Salans, State Department Deputy Legal Advisor, "Legal Aspects of Arab Israeli Confrontation on Gulfs of Aqaba and Suez."

MG Kenneth J. Hodson, The Judge Advocate General of the Army, "Military Law."

DEPARTMENT OF MATHEMATICS

Dr. J. Stuart Hunter, Princeton University, "Statistics."

DEPARTMENT OF MECHANICS

COL Frank Borman, Astronaut NASA, "Astronauts and Lunar-Apollo Program."

Arthur E. Bergles, Massachusetts Institute of Technology, "Boiling Heat Transfer."

Warren M. Rohsenow, Massachusetts Institute of Technology, "Developments in Heat Transfer."

Victor G. Szebehely, Yale University, "Space Mechanics."

J. P. Den Hartog, Massachusetts Institute of Technology, "Mechanical Vibrations."

DEPARTMENT OF MA&E

Dr. Peter Paret, University of California, "French Doctrine of Revolutionary Warfare."

Dr. Maurice Matloff, Office of Chief of Military History, "The Historical Development of United States Strategic Thinking."

DEPARTMENT OF ORDNANCE

LTC Stan R. Sheridan, Project Officer, Main Battle Tank, OCRD, "Defeat of Armor."

DEPARTMENT OF SOCIAL SCIENCES

Dr. John Blanford, Chief Counsel on Armed Services, U.S. House of Representatives, "The Role of Congress in National Security Policy Formulation."

Professor George N. Halm, Tufts University, "Authoritarian Capitalism."

Professor Cyril E. Black, Department of History, Princeton University, "Models of Modernization."

Professor Howard Boorman, Columbia University, "Modern Chinese Military Power."

Dr. F. H. Fedlam, American University, "Germany and Political Modernization."

Professor John W. Lewis, Department of Government, Cornell University, "Chinese Leadership in Crisis."

Honorable Robert V. Roosa, Brown Brothers Harriman, "International Liquidity and Money Reform."

Professor S. Williamson, Harvard, "New Frontier Diplomacy."

Professor William Withers, Queens College, "Latin American Economic Development, Problems and Prospects."

Mr. William C. Sullivan, FBI, Assistant Director, "Communism USA."

Professor Louis Snyder, City College of New York, "Nazi Totalitarianism in Retrospect."

Professor Abdul Said, The American University, "North Africa Today."

Dr. John N. Plank, Brookings Institution, "U.S. Policy and Latin American Political Development."

Honorable John S. Badeau, Director Middle East Institution, Columbia University, "Arab Nationalism."

Professor Stanley J. Kunitz, Columbia University, "Literature in the Soviet Union; Politics and Art."

Lady Barbara Ward Jackson, Professor Radcliffe, "The Dilemma World, Poverty and Wealth."

DEPARTMENT OF MP&L

Dr. Donald Bradley, New York University, "Community Political Systems."

Dr. Bernard Bass, University of Pittsburgh, "Small Group Leadership."

Dr. J. Capozzola, New York University, "Human Relations and Management."

Brigadier General Gleszer, Director Manpower Office of Comptroller, "Management in the Military."

Dr. Charles Moskos, Northwestern University, "The Military Leader in Today's Society."

John McCarthy, Boston Massachusetts, "Leadership Practices."

COL Howard G. Moore, Harvard University, "Leading the American Soldier in Combat."

OFFICE OF MILITARY INSTRUCTION

CPT E. Silvasy, Ft. Benning, Georgia, "Personal Experiences of a Company Commander in Vietnam."



Activities

EDUCATIONAL ACTIVITIES

The Military Academy offers varied opportunities for cadets who are interested in exploring fields of academic study on a broader or more intensive basis than is provided in the formal academic curriculum. Seminars, special guest lectures, discussion groups, student conferences, and intercollegiate debates are undertaken on cadet initiative and carried out primarily with cadet effort. The largest and most active organization in this field is the Debate Council and Forum whose members engage in intercollegiate debates and discussions in all parts of the United States during the academic year. This organization also sponsors voluntary seminars on public affairs topics in which cadets express interest.

Student Conference on United States Affairs

Annually since 1949, the United States Military Academy, with the assistance of private financial aid, has sponsored a Student Conference on United States Affairs, known as SCUSA. Outstanding students from more than 100 United States and Canadian colleges and universities gather for a four-day conference in early December with approximately 45 senior individuals from college faculties, business, and government. Meeting in small seminars, the participants discuss major aspects of U.S. foreign policy and formulate policy recommendations. The Cadet Debate Council and Forum administers these conferences and acts as host.

The purposes of these conferences are (1) to examine and discuss



A SCUSA round table meets in USMA Library

U.S. foreign policy, (2) to provide an outstanding representation of college students with an appreciation of the complexities of government policy formulation, and (3) to broaden students' contacts with their contemporaries in an academic endeavor.

The principal speakers at the XVIIth through the XIXth conferences are given below:

SCUSA XVII: 1-4 December 1965

HONORABLE FRANK PACE, JR.

President, The International Executive Service Corps

Former Secretary of the Army

GENERAL MAXWELL D. TAYLOR

Special Consultant to the President

Former Ambassador to Republic of Vietnam

Former Chairman, Joint Chiefs of Staff

SCUSA XVIII: 30 November-3 December 1966

PROFESSOR HENRY A. KISSINGER

Harvard University

HONORABLE LINCOLN GORDON

Assistant Secretary of State for Latin American Affairs

SCUSA XIX: 6-9 December 1967

HONORABLE PAUL H. NITZE

Deputy Secretary of Defense

DR. JOSEPH E. JOHNSON

President, Carnegie Endowment for International Peace

The Fine Arts Forum

The Fine Arts Forum arranges for numerous trips, generally to New York City, to allow the interested cadet to experience a variety of cultural activities not available at the Military Academy. Examples of these include the opera, ballet, plays, symphonies, and visits to museums and galleries. Often an extra attraction is a visit backstage or a personal tour by a leading artist. A number of activities are also brought to the Academy under the sponsorship of this forum, the Cadet Dialectic Society, or the Great Films program.

West Point Debate Council

The Debate Council, an extracurricular activity within the Debate Council and Forum, sponsors an extensive program affording its members the opportunity to acquire forensic skills in competitive tournament debating with colleges and universities throughout the country. The Debate Council program for a typical year includes:

seminars on argumentation and debate, seminars on the substantive issues of the national debate topic, intra-squad practice debating, and varsity and novice intercollegiate competition.

USMA debate teams participate in many of the leading college debate tournaments (44 in 1966-67, involving 425 debates with 162 colleges and universities). Through the consistently sound performance each year of its 15 to 20 debate teams in tournaments throughout the nation, West Point has achieved recognition as one of the leading schools in intercollegiate debating.

West Point Forum

This cadet organization, a part of the Debate Council and Forum, provides the cadet an opportunity to widen his intellectual interests.

It conducts seminars on a variety of topics to prepare cadets to participate in a large number of student conferences and model United Nations assemblies throughout the country. In 1966-67 cadets participated in conferences at such institutions as Rensselaer Polytechnic Institute, Harvard, Texas A&M, Georgetown, U.S. Naval Academy and the U.S. Air Force Academy. The Forum sponsors educational trips each year to the United Nations and to Washington, D.C., to allow cadets to observe at first hand the operations of the United Nations and the major branches of our own Government.

Cadet Participation in Scientific Events

Cadets participate in a number of annual scientific events such as the Eastern Colleges Science Conference. The close proximity of West Point to a large number of governmental, cultural, scientific, industrial, and research activities has enabled the Military Academy to extend classroom discussions and laboratory exercises into "the field" in a highly effective manner through a program of educational trips. Cadets have visited such installations as the Brookhaven National Laboratories, the Nevis Cyclotron Laboratory at Columbia University, Bell Telephone Laboratories, the Research and Development Laboratories at Fort Monmouth, the International Electric Corporation, the Republic Aviation Corporation, the Texaco Laboratories, Charles Pfizer and Company, and Aberdeen Proving Ground.

Cadet Activities

A West Point cadet is one of the busiest college students in the nation. Yet, despite a tight schedule including studies, classes, parades, and other military functions, he manages to take advantage of the numerous extracurricular activities offered at the United States Military Academy.

As a future officer, the USMA cadet must be a many-faceted individual. To cope with the complexity of modern warfare and the requirements inherent in leadership, cadets will need to acquire confidence and a working knowledge in a variety of fields. Extracurricular and recreational activities, in conjunction with the Military Academy's academic and military requirements, help give cadets the varied interests, knowledge, and experience in working with others needed for their future careers.



During the summer, facilities are provided for swimming and picnicking at Delafield Pond and Camp Buckner, and picnicking at Constitution Island. Picturesque Flirtation Walk winds for three-quarters of a mile along the majestic Hudson, offering a peaceful and shady retreat from the walls of the barracks. Cadets of the Third Class stationed at Camp Buckner during the summer months enjoy swimming, canoeing, fishing, skeet, water skiing, and sailing. In the fall, the Corps takes one or more football trips to metropolitan areas where the bright lights are a welcome diversion. During the winter months, ice skating at Smith Rink and skiing at the Victor Constant Ski Slope are extremely popular. The ski tows, snow-making machines, ski jump and ski trails are probably among the finest ski facilities on any campus in America. Throughout the aca-

demic year, frequent hops are held in the Gymnasium and Cullum Hall, and movies are shown in the Army Theater. Prominent entertainers and programs are frequently brought to the Academy for performances.

In addition to general activities, there are 64 organized extracurricular activities. Student government activities include the Class Committees, Ring and Crest Committees, and the Hop Committees in each Class.

Cadets also have available many sports, organized on a club level, which in conjunction with Varsity Sports, Intramural Athletics, and Scheduled Physical Training develop the physical prowess and skills that will serve them well later. Handball, skiing, rugby football, and triathlon sports provide vigorous recreation. Pistol, rifle, and skeet-shooting clubs develop cadet skill with firearms. Competitive sailing and water polo teach cadets to handle boats and take care of themselves in the water. The Cadet Sport Parachute Club provides parachute jumping experience, and the SCUBA Diving Club, underwater training for interested cadets. The techniques of mountain climbing are taught to members of the Mountaineering Club, and the Outdoor Sportsmens Club has facilities for hunting, fishing, and archery. The Cadet Riding Club has acquired a few fine mounts for equestrian activities.

Other clubs and organizations supplement academic study. One of the largest and most active of these is the West Point Debate Council and Forum. Through participation, the future officer gets practice in public speaking and in the art of persuasion. The Student Conference on United States Affairs held at the Military Academy attracts participation by students and leaders from all over the country. To supplement cadet studies are the Mathematics Forum; six Foreign Language Clubs; and astronomy, Audio, Amateur Radio, and Rocket Clubs. Cadets in the latter club



have gained practical space-age experience in rocketry by launching their own homemade miniature rockets and by visiting Cape Kennedy and the George C. Marshall Space Centers.

Literary experience is another aspect of cadet extracurricular activity. Cadets put out their own yearbook, *THE HOWITZER*; their own monthly magazine, "*THE POINTER*;" a small handbook called *BUGLE NOTES* to acquaint new Fourth Classmen (Freshmen) with the customs, traditions, and history of the Military Academy; and "*Slum and Gravy*," a bimonthly sports bulletin.

KDET is the cadet AM radio station, fully equipped for voice broadcasting. Other hobbyists can find a place in the Academy's Chess Club, and cadets interested in fine arts find the activities of the Fine Arts Forum very broadening.

For those who are musically inclined, the Cadet Band and combos; the nationally-famed Cadet Glee Club; the Cadet Protestant, Catholic, and Jewish Chapel Choirs are available to those cadets who desire to sing or play a musical instrument. These groups often perform for national television or concert audiences.

Cadets also teach Sunday School for Post children. Another community service cadet group, the Scoutmasters Council, annually hosts a Camporee which draws as many as 2500 Boy Scouts from all over the Eastern seaboard.

The Dialectic Society provides musical and acting outlets for cadets. Highlighting its annual activities is the time-honored "100th Night Show," presented, as the name implies, 100 nights before Graduation. The show is written and produced by cadets, who also provide all the actors.

Organized extracurricular activities are directed and administered almost entirely by the cadets themselves, subject to the approval of the Commandant of Cadets. There is a volunteer Officer-in-Charge of each activity, who acts in an advisory capacity in addition to his other duties. Participation in these activities provides cadets an opportunity to acquire a wealth of knowledge and develop leadership and administrative talents which subsequently will serve them well in their careers as Army officers.

There are a number of large, well-equipped cadet reception rooms and lounges for cadets and their guests. Some have fully equipped snack bars, TV rooms, game rooms, and all are normally open on weekends and holidays throughout the year. The Cadet Activities Office, part of the staff for the Commandant of Cadets, helps plan the social and recreational programs for the Corps of Cadets. Four Cadet Hostesses provide assistance to the Commandant of Cadets in developing the program and also assist cadets in obtaining accommodations for their guests during the year.

RELIGIOUS ACTIVITIES

All cadets are provided a sound basic religious atmosphere. Each cadet must attend one of the weekly chapel services—Protestant, Catholic, or Jewish.

Protestant

Protestant services are held in the Cadet Chapel every Sunday during the academic year and out-of-doors during the summer months. The Reverend James D. Ford, B.D., is the chaplain, USMA and Mr. John A. Davis, Jr., M.A., is Organist and Choirmaster. At the morning Worship Service the form of worship is interdenominational in character. Among the religious activities in which cadets take part are the Cadet Chapel Choir of 175 voices, the West Point Sunday School of 700 children of the Post taught entirely by 160 cadet teachers, the Cadet Chapel Acolytes, a program of Morning Devotions conducted every weekday at 6:30 a.m., evening discussion groups and annual religious retreats. In addition, Denominational Services are conducted each week.

Catholic

Catholic cadets attend Holy Trinity Chapel, which is the Catholic Chapel on the Post. Reverend Robert F. McCormick, the Rector is assisted by Reverend Edwin F. O'Brien. Each Sunday Catholic members of the Cadet Regiments alternate in attending the early and late Masses to give opportunity for assisting at the late Mass which is a song Mass. A Cadet Catholic choir sings at the High Masses and other liturgical ceremonies. Cadet commentators and readers assist at all Cadet Masses. Daily Mass is celebrated at 6:30 a.m. and 5:00 p.m. throughout the academic year. Confessions are heard on Saturday, daily at Mass time, and as desired. A Cadet Cardinal Newman Forum meets each week. By means of lectures, instructions and seminars, it treats of religion, morals and philosophy. Cadets teach Sunday School every week to preschool and kindergarten children.

Jewish

Jewish worship services are held in the Old Cadet Chapel every Sunday at 8:30 a.m. during the academic year and at 10:30 a.m. during the summer season. Rabbi Avraham Soltes is the Jewish Chaplain. High Holy Day Services are held for the cadets at Temple Emanuel of Great Neck, L.I., N.Y. where the Jewish Chaplain serves as Spiritual Leader. Festival Services are conducted in the Old Cadet Chapel, and a special Passover service is held yearly at the U.S. Hotel Thayer. The Jewish Chapel Choir sings the Liturgical music at every service. The Jewish cadets also participate in the reading of the Liturgy and in the Torah service. Religious instruction for Post children of the Jewish faith is conducted by cadets on Sunday morning.



Cadet Chapel



Protestant Sunday School Teacher



Catholic Chapel



Catholic Chapel Choir



Jewish Chapel Choir



Jewish Worship Services

INTERCOLLEGIATE ATHLETICS

Athletic Board: Col. Elvin R. Heiberg (chairman), Brig. Gen. Bernard W. Rogers, Brig. Gen. John R. Jannarone, Col. Frank J. Kobes, Jr., Col. Jerry G. Capka (Secretary).

Director of Athletics: Col. Jerry G. Capka.

Asst. Dir. for Resource Management: Maj. Robert E. Deardorff, Jr.

Assistant Director of Athletics: John P. Riley

Asst. Dir. of Athletics for Admissions Support: Tad Schroeder

Coaches: **Baseball and 150-lb. Football**—Eric Tipton

Basketball—Robert Knight

Assistants—Don DeVoe, Al LoBalbo

Cross Country and Track—Carleton Crowell

Football—Thomas B. Cahill

Assistants—Robert M. Mischak

William Meek

Tad Schroeder

Duane Parcels

Jack Hecker

John McCauley

Richard Lyon

Golf—Dennon West

Gymnastics—Frank A. Wells

Hockey—John P. Riley

Lacrosse—James F. Adams

Pistol—SMAJ Leonard Ross

Rifle—SFC Kenneth Hamill

Soccer—Joseph Palone

Squash and Tennis—William C. B. Cullen

Swimming—John E. Ryan, Jr.

Wrestling—LeRoy Alitz

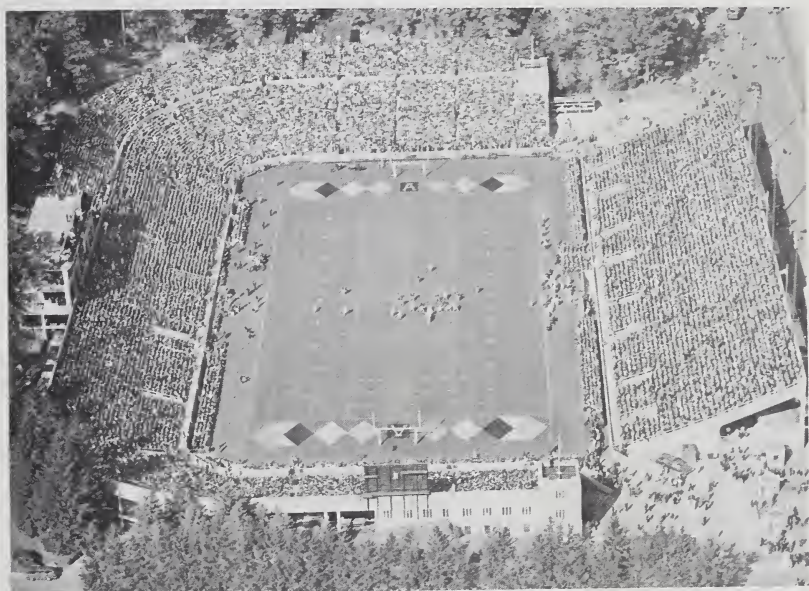
The Director of Athletics is responsible to the Superintendent for the conduct of the intercollegiate athletic program and the operation of the Army Athletic Association (AAA). The Athletic Board, composed of five senior officers on active duty at West Point, serves as an advisory council to the Superintendent on policies pertaining to intercollegiate athletics. The intercollegiate athletic program is financed by the AAA, which is a self-supporting and nonprofit organization consisting of approximately 12,000 graduates of the Military Academy. No Government funds are appropriated for equipment, maintenance, and operation of the intercollegiate athletic plant.

The Army Teams are well known for their great spirit and desire. Nearly half of the Corps of Cadets engage in nineteen competitive sports:

football, 150 pound football, soccer, and cross country in the fall, basketball, indoor track, wrestling, swimming, fencing, gymnastics, hockey, rifle, pistol, and squash in the winter, and baseball, lacrosse, track, tennis, and golf in the spring.

The Army Football Team is coached by Tom Cahill, who was 1966 Coach of the Year. Defense was a name synonymous with football at Army for many years but in the last few seasons offense has shared the spotlight.

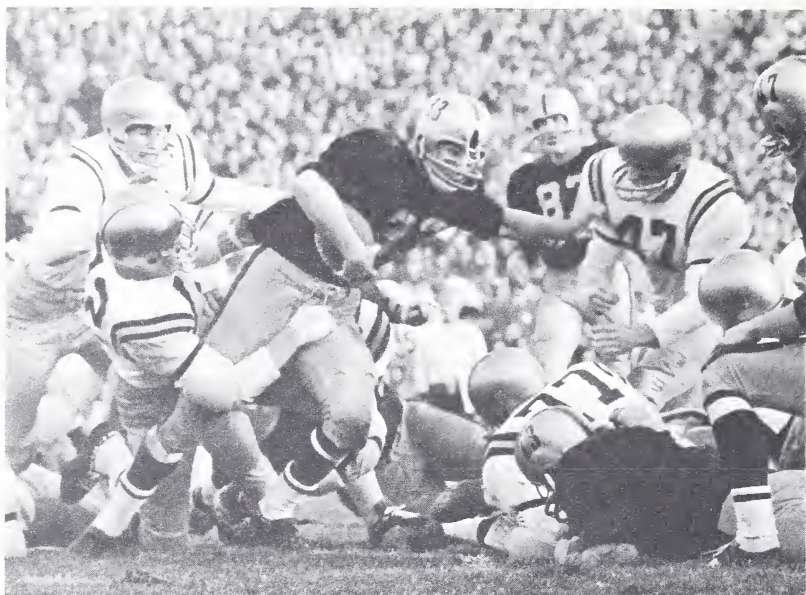
The schedule features top teams from throughout the United States and is capped by the nationally televised sport spectacular—the Army-Navy Game.



Michie Stadium

1968 FOOTBALL SCHEDULE

September 21st	—	The Citadel
September 28th	—	Vanderbilt
October 5th	—	Missouri (At Columbia)
October 12th	—	California (Homecoming at West Point)
October 19th	—	Rutgers (At New Brunswick)
October 26th	—	Duke
November 2d	—	Penn State (At University Park)
November 9th	—	Boston College
November 16th	—	Pittsburgh (At Pittsburgh)
November 30th	—	Navy (At Philadelphia)



Many Army Teams and individual cadets have participated in the NCAA National Championships. In addition, the Army Basketball Team has appeared in the National Invitation Tournament in Madison Square Garden on three occasions.

Cadets taking part on athletic teams representing the Military Academy are recognized as part of the Corps of Cadets and consequently the teams increase the identity every cadet feels with all athletics. Athletic competition is important in the development of a cadet, and every effort is made to provide the Cadets with fine facilities, equipment, and coaches.

Realizing the value of athletics to the Army, General Douglas MacArthur, who was Superintendent shortly after World War I, reorganized and strengthened the athletic system. "The training of the athletic field which," General MacArthur said, "produces in a superlative degree the attributes of fortitude, self-control, resolution, courage, mental agility and, of course, physical development, is one completely fundamental to an efficient soldiery."

Former President Dwight D. Eisenhower and Generals Omar N. Bradley and James A. Van Fleet are among the many distinguished wearers of the Army "A". Major Pete Dawkins, Army Football Captain, Heisman Trophy winner, All-American Halfback and Rhodes Scholar, and the late Lt. Col. Ed White, the first astronaut to walk in space and track star as a Cadet, are two recent graduates.



Awards and Distinctions

Distinguished Cadets

In June of every year those cadets on the general merit roll of each class and on the graduating merit roll whose records show they have met the requirements set by the Academic Board are classed as "Distinguished." Distinguished cadets wear a five-pointed star, three-quarters of an inch in diameter, on each side of the collar of the dress coat and the full dress coat. The star is worn for one year by cadets who were distinguished in the work of the Second, Third, or Fourth Class year.

Dean's List

Periodically during the year a Dean's List is published with the objectives of encouraging cadets to seek excellence in their academic endeavors and of recognizing those who do. Dean's List status is reflected on the periodic progress reports which are furnished to parents.

Individual Academic Awards

1. MILITARY ORDER OF FOREIGN WARS OF THE UNITED STATES AWARD (1929). A wrist watch given by the National Commandery, Military Order of Foreign Wars of the United States to the graduating cadet with highest rating in First Class course in social sciences.

2. DAUGHTERS OF THE AMERICAN REVOLUTION AWARD (1930). A portable typewriter given by the National Society, Daughters of the American Revolution to the graduating cadet with the highest rating in mechanics of fluids.

3. THE ROBERT E. LEE MEMORIAL AWARD (1931). A Saber given by the United Daughters of the Confederacy to the graduating cadet with the highest rating in mathematics.

4. THE U.S. GRANT AWARD (1932). A wrist watch given by the National Woman's Relief Corps, Auxiliary to the Grand Army of the Republic, Inc., to the graduating cadet with the highest rating in engineering fundamentals.

5. COLONIAL DAUGHTERS OF THE SEVENTEENTH CENTURY AWARD (1934). A set of books given by the National Society, Colonial Daughters of the Seventeenth Century, to the graduating cadet with the highest rating in English.

6. AMERICAN LEGION AWARD (1935). A camera given by the National Organization of the American Legion to the graduating cadet with the highest rating in chemistry.

7. STEUBEN SOCIETY OF AMERICA AWARD (1936). A wrist

watch given by the Steuben Society of America to the graduating cadet with the highest rating in German.

8. VETERANS OF FOREIGN WARS OF THE UNITED STATES AWARD (1937). A camera given by the Veterans of Foreign Wars of the United States to the graduating cadet with the highest rating in physics.

9. LADIES AUXILIARY TO THE VETERANS OF FOREIGN WARS OF THE UNITED STATES AWARD (1939). A pair of binoculars given by the Ladies Auxiliary to the Veterans of Foreign Wars of the United States to the graduating cadet with the highest rating in Fourth Class English.

10. AMERICAN BAR ASSOCIATION AWARD (1941). A set of books given by the American Bar Association to the graduating cadet with the highest rating in law.

11. DAUGHTERS OF FOUNDERS AND PATRIOTS OF AMERICA AWARD (1942). A wrist watch given by the National Society, Daughters of Founders and Patriots of America, to the graduating cadet with the highest rating in Portuguese.

12. ARMED FORCES COMMUNICATIONS AND ELECTRONICS AWARD (1948). A transistor radio given by the Armed Forces Communications and Electronics Association to the graduating cadet with the highest rating in electricity.

13. THE CLASS OF 1930 AWARD (1954). A silver bowl presented in the name of the late Edgar Bromberger to the graduating cadet with the highest rating in the Second Class course in social sciences.

14. THE COLONEL JAMES L. WALSH MEMORIAL AWARD (1956). A rifle presented in the name of the American Ordnance Association to the graduating cadet with the highest rating in ordnance engineering.

15. THE LESLIE R. GROVES AWARD (1957). A silver tray presented in behalf of the Association of Graduates to the graduating cadet with the highest rating in nuclear physics.

16. THE ENVIRONMENT AWARD (1958). A wrist watch awarded by friends of West Point to the graduating cadet with the highest rating in Environment.

17. THE CLIFTON CARROLL CARTER AWARD (1962). A pistol presented in behalf of the Carter family as a memorial to the late Brig. Gen. Clifton Carroll Carter, USMA 1899, to the graduating cadet with the highest rating in Second Class mechanics of solids.

18. SONS OF THE AMERICAN REVOLUTION AWARD (1962). A camera given by the National Society of the Sons of the American Revolution to the graduating cadet with the highest rating in advanced engineering fundamentals.

19. DAUGHTERS OF THE UNITED STATES ARMY AWARD (1962). A silver cigarette box given by the Daughters of the United States Army to the graduating cadet with the highest rating in advanced chemistry.

20. THE LADIES AUXILIARY JEWISH WAR VETERANS OF THE UNITED STATES OF AMERICA AWARD (1963). A set of books presented by the National Ladies Auxiliary, Jewish War Veterans of the United States of America, in honor of Mr. Benjamin Kaufman, winner of World War I Medal of Honor, to the graduating cadet with the highest rating in humanities.

21. THE ORDER OF LAFAYETTE INC., AWARD (1964). A plaque given by the Order of Lafayette Inc., to the cadet with the highest rating in French.

22. DAUGHTERS OF THE AMERICAN COLONISTS (1964). A silver tray given by the National Society, Daughters of the American Colonists to the graduating cadet with the highest rating in Spanish.

23. THE HERMAN BEUKEMA MEMORIAL AWARD (1965). A silver pitcher presented in the name of the Beukema family and the Military Education Foundation to the graduating cadet for excellence in modern history.

24. THE BRIG. GEN. GERALD A. COUNTS MEMORIAL AWARD (1966). A silver tray presented in the name of Mrs. Gerald A. Counts and the John M. Minor family to the graduating cadet with the highest rating in advanced physics.

25. THE COLONEL PHILIP MATHEWS MEMORIAL AWARD (1966). A silver bowl presented in the name of Miss Ann I. Mathews as a memorial to her late brother, to the graduating cadet for the highest rating in Russian.

26. THE BRIG. GEN. CHARLES J. BARRETT MEMORIAL AWARD (1966). A wrist watch presented as a memorial to the late Gen. Barrett to the graduating cadet with the highest rating in advanced foreign language study.

Individual Military Awards

1. THE KNOX TROPHY (1910). A silver cup presented by the Sons of the Revolution in the State of New York to the cadet with the highest rating in military efficiency.

2. THE PERSHING SWORD (1929). A sword, presented in the name of the late Brig. Gen. Charles G. Dawes to the Graduating Cadet Captain and Brigade Commander to commemorate General Pershing's being First Captain of the Corps of Cadets in 1886.

3. ASSOCIATION OF GRADUATES AWARDS (1942). A \$100 series E bond presented by the Association of Graduates to the cadet in

the Second Class, and \$75 and \$50 series E bonds to the cadets in the Third and Fourth Classes outstanding in military efficiency and leadership.

4. THE GENERAL JOHN J. PERSHING AWARD (1948). A wrist watch given by the Army and Navy Union, USA, to the cadet with the highest rating in tactics.

5. THE EISENHOWER AWARD (1951). A silver tray presented in the name of Mr. Charles P. McCormick to the graduating cadet for excellence in military psychology and leadership.

6. THE GENERAL DOUGLAS MacARTHUR AWARD (1952). A pistol given by the Army and Navy Union (Department of New York) to the cadet officer commanding the First Regiment, USCC.

7. ARMY AND NAVY UNION LADIES AUXILIARY AWARD (1952). A pistol given by the Ladies Auxiliary of the Army and Navy Union, USA, (Department of New York) to the cadet officer commanding the Second Regiment, USCC.

8. THE 306TH INFANTRY AWARD (1954). A wrist watch made available by the late Walter B. Tunick to the graduating cadet achieving excellence in physical education over the four year course.

9. CLASS OF 1927 AWARD (1957). A wrist watch given by the Class of 1927, USMA, to the cadet officer commanding the Third Regiment, USCC.

10. THE LEADERSHIP AWARD (1962). A wrist watch given by the Leadership Foundation to the cadet officer commanding the Fourth Regiment, USCC.

11. THE GENERAL JOHN H. FORNEY HISTORICAL SOCIETY AWARD (1963). A set of luggage presented to a graduating cadet for Military Excellence in First Class Tactics.

12. OUTSTANDING COMPANY COMMANDER FIRST REGIMENT AWARD (1967). A silver tray donated by MAJ. GEN. John M. Weikert, Class of 1923, to the outstanding company commander First Regiment, USCC.

13. OUTSTANDING COMPANY COMMANDER SECOND REGIMENT AWARD (1967). A silver tray donated by CPT. Bernard W. Abrams, USMA 1947, to the outstanding company commander Second Regiment, USCC.

14. OUTSTANDING COMPANY COMMANDER THIRD REGIMENT AWARD (1967). A silver tray presented to the outstanding company commander Third Regiment, USCC.

15. OUTSTANDING COMPANY COMMANDER FOURTH REGIMENT AWARD (1967). A silver tray presented to the outstanding company commander Fourth Regiment, USCC.



16. THE LIEUTENANT COLONEL RODNEY H. SMITH AWARD (1968). An award presented as a memorial to the late COL. Smith by his associates from the Dept. of Military Art and Engineering to the graduating cadet with the highest rating in Military Engineering.

17. THE BRIGADIER GENERAL VINCENT J. ESPOSITO AWARD (1968). An award established by the late GEN. Esposito former Professor and Head of the Department of Military Art and Engineering to the graduating cadet with the highest rating in the History of the Military Art.

Individual General Awards

1. FRANCIS VINTON GREENE MEMORIAL AWARD (1920). A set of books given in memory of MAJ. GEN. Francis Vinton Greene, USMA 1870, to the cadet standing number one in the general order of merit for four years.

2. MILITARY ORDER OF WORLD WARS AWARD (1942). A wrist watch presented to the graduating cadet who has made the greatest improvement since the completion of his fourth-class year.

3. THE CONSUL GENERAL OF SWITZERLAND AWARDS (1947). Two wrist watches given by the Consul General of Switzerland in the United States for excellence in intercollegiate debating.

4. THE HOWITZER MEMORIAL AWARD (1952). A set of books in memory of the late Lt. Arthur M. Apmann, Jr., USMA 1950, to the Editor of the "Howitzer."

5. ARMY TIMES AWARD (1956). A wrist watch presented in the name of the Army Times to the Editor of "The Pointer."

6. ASSOCIATION OF THE UNITED STATES ARMY AWARD (1961). A wrist watch presented in the name of the Association of the United States Army to the cadet who best exemplifies the traditions of the United States Military Academy and the United States Army.

7. THE PERUVIAN ARMY AWARD (1964). A plaque presented by the Peruvian Army to the graduating cadet ranking number one in General Order of Merit for four years.

8. ASSOCIATION OF GRADUATES AWARD (1965). A silver tray presented in behalf of the Association of Graduates for excellence in all fields of cadet endeavor.

9. THE COLONEL SAMUEL A. DANIEL MEMORIAL AWARD (1965). A silver tray presented in the name of Mrs. Samuel A. Daniel to the Cadet-in-Charge of the Cadet Chapel Choir.

Individual Athletic Awards

1. THE PIERCE CURRIER FOSTER MEMORIAL TROPHY (1900). A silver tray presented in the name of the late Mrs. Anna A. Foster as a memorial to the late Lt. Foster to the best all round gymnast.

2. THE PIERCE CURRIER FOSTER MEMORIAL TROPHY (1900). A silver tray presented in the name of the late Mrs. Anna A. Foster as a memorial to the late Lt. Foster to the outstanding member of the 1968 wrestling team.

3. ARMY ATHLETIC ASSOCIATION TROPHY (1904). A silver tray is given by the Army Athletic Association to the cadet who has rendered the most valuable service to athletics during his career as a cadet.

4. THE EDGERTON AWARD (1908). A silver tray presented in the name of the late COL. Wright P. Edgerton, USMA 1874, to the captain of the 1967 football team.

5. THE WILLIAM P. FICKES MEMORIAL TROPHY (1938). A silver tray presented in the names of the late Mr. and Mrs. Walter M. Fickes as a memorial to the late LT. Fickes, USMA 1936, to the captain of the 1968 lacrosse team.

6. THE COLONEL THRUSTON HUGHES AWARD (1939). A silver tray presented in the name of Mrs. Thruston Hughes as a memorial to the late COL. Hughes, USMA 1909, to the most valuable player on the 1967 Army Football Team.

7. THE EBER SIMPSON MEMORIAL TROPHY (1947). A silver tray presented as a memorial to the late CPT Simpson, USMA 1943, to the captain of the 1968 basketball team.

8. THE CLASS OF 1923 MEMORIAL AWARD (1949). A silver tray

presented in the name of the Class of 1923 to the outstanding member of the swimming team in the graduating class.

9. THE COLONEL DAVID MARCUS MEMORIAL AWARD (1949). A silver tray presented as a memorial to the late Col Marcus, USMA 1924, to the outstanding boxer in the graduating class.

10. THE BRIG. GEN. JOHN W. COFFEY MEMORIAL TROPHY (1952). A silver tray presented as a memorial to the late Gen. Coffey, USMA August 1917, to the captain of the 1968 baseball team.

11. THE HAL BEUKEMA MEMORIAL AWARD (1955). A silver tray presented as a memorial to the late MAJ. Henry Saw Beukema, USMA 1944, to the outstanding hockey player.

12. THE GENERAL GEORGE S. PATTON, JR., MEMORIAL TROPHY (1956). A pistol presented in memory of GEN. Patton, USMA 1909, to the captain of the 1968 pistol team.

13. THE MAJ. GEN. WILLIAM L. BELL, JR., MEMORIAL AWARD (1957). A silver tray presented as a memorial to the late GEN. Bell, USMA 1929, to the captain of the 1968 gymnastics team.

14. THE THOMAS WEST HAMMOND MEMORIAL AWARD (1958). A silver tray, presented as a memorial to the late COL. Hammond. USMA 1905, to the outstanding lineman on the 1967 army football team.

15. THE EASTERN COLLEGE ATHLETIC CONFERENCE MERIT AWARD (1959). A medal presented to the graduating cadet excelling in athletics and scholarship.

16. THE COLONEL JOHN A. ROBENSON MEMORIAL AWARD (1961). A silver tray presented as a memorial to the late COL. Robenson, USMA 1910, to the outstanding player on the 1967 150-pound football team.

17. THE FRED E. McANIFF MEMORIAL AWARD (1961). A silver tray presented in the name of the Society, Daughters, United States Army, West Point Chapter, as a memorial to the late Fred E. McAniff, USMA 1963, to the outstanding member of the 1968 varsity track team in the graduating class.

18. THE RINGSDORF AWARD (1961). A silver tray donated by COL. Samuel D. Ringsdorf, USMA Aug. 1917, and COL. Paschal H. Ringsdorf, USMA 1923, to the outstanding army football player in the Army-Navy game.

19. THE FRANCIS HENRY SCHOEFFEL MEMORIAL AWARD (1963). A rifle presented as a memorial to the late LTC Schoeffel, USMA 1891, to the captain of the 1968 rifle team.

20. THE ATHLETIC BOARD AWARD (1964). A silver tray presented to the outstanding member of the 1967 cross country team.



21. THE ATHLETIC BOARD AWARD (1964). A silver tray presented to the outstanding player on the 1967 soccer team.

22. THE COLONEL RUSSELL P. "RED" REEDER, JR., AWARD (1965). A silver tray presented by friends to the outstanding player on the 1968 baseball team.

23. THE ATHLETIC BOARD AWARD (1965). A silver tray presented in the name of the Athletic Board to the outstanding member of the 1968 golf team.

24. THE ATHLETIC BOARD AWARD (1965). A silver tray presented in the name of the Athletic Board to the outstanding player on the 1968 tennis team.

25. THE ATHLETIC BOARD AWARD (1965). A silver tray presented in the name of the Athletic Board to the outstanding player on the 1967 squash team.

26. INTRAMURAL AWARDS (1966). Winners of brigade individual sports contests such as track and cross country are awarded silver medallions; runners-up receive bronze medallions.

27. THE LT. MICHAEL W. KILROY MEMORIAL AWARD (1967). A silver tray given by Mr. & Mrs. Harold F. Kilroy in memory of LT. M. W. Kilroy, USMA 1963, to the captain of the 1968 swimming team.

28. THE COLONEL JAMES B. GILLESPIE MEMORIAL AWARD (1967). A silver tray presented as a memorial to the late COL. Gillespie, USMA 1913, to the captain of the 1968 track team.

29. THE COLONEL JAMES B. GILLESPIE MEMORIAL AWARD

(1967). A silver tray presented as a memorial to the late COL. Gillespie, USMA 1913, for performance, dedication and contribution to the 1967 army football team.

Unit Achievement Awards

1. SUPERINTENDENT'S AWARD (1958). Four plaques awarded to the cadet company in each regiment which is judged to be the most outstanding in all areas of cadet endeavor.

2. ARMY ATHLETIC ASSOCIATION AWARD (1958). Four plaques awarded to the cadet company in each regiment which has made the greatest contribution to intercollegiate athletics.

3. BANKERS ASSOCIATION OF NEW YORK AWARD (1924). Awarded annually to the cadet company ranking first in intramural athletics during the year.

4. REGIMENTAL COMMANDER'S DRILL AWARD. Four plaques awarded three times each year to coincide with the three drill seasons to the cadet company in each regiment that is the most outstanding in drill and ceremonies.

5. PALMER E. PIERCE FOOTBALL TROPHY (1943). This silver cup, originally awarded to GEN. Palmer E. Pierce, USMA 1891, by the National Collegiate Athletic Association in recognition of his services to the Association, and bequeathed by him to the Army Athletic Association, is awarded to the company winning the brigade championship in intramural football.

6. GEORGE ALEXANDER CAMPBELL II MEMORIAL TROPHY (1949). Established by members of the Class of 1951 in memory of their classmate, Cadet Campbell, who died during yearling summer camp, this silver cup is awarded to the company winning the brigade championship in intramural basketball.

7. JARED WILLIAM MORROW MEMORIAL TROPHY (1951). Established by CPT. Gerald D. Hall, USMA 1944, in memory of LT. Jared William Morrow, USMA 1945, who died in battle in Korea in 1950, the silver cup is awarded to the company winning the brigade championship in intramural track.

8. ARTHUR H. TRUXES MEMORIAL TROPHY (1951). Established by CPT. Gerald D. Hall, USMA 1944, in memory of CPT. Arthur H. Truxes, Jr., USMA 1945, who died in battle in Korea in 1950, this silver cup is awarded to the company winning the brigade championship in intramural cross country.

9. INTRAMURAL ATHLETIC AWARDS. Plaques are awarded to the companies winning the brigade championships in each intramural sport; smaller plaques are awarded to brigade runners-up.

THE MUSEUM

Director: Mr. Richard E. Kuehne

Curator of History: Mr. Gerald C. Stowe

Curator of Design: Mr. Ray W. Moniz

Museum Specialist: Mr. Robert W. Fisch

Museum Technician: Mr. Philip M. Cavanaugh

The West Point Museum is located in Thayer Hall, occupying the first and second floors of the southwest portion of this academic building. Its galleries and special displays are open without charge to the public throughout the year, every day of the week, from 10:30 a.m. to 4:30 p.m. The Museum is closed only on Christmas and New Year's Day.

Adjacent to the public galleries are the storage and research rooms maintained by the Museum to carry out its primary duty as a college museum by supporting the academic and military education of cadets of the Military Academy. To this end it maintains a continuous series of changing exhibits in cadet areas, arranges lectures and demonstrations, and opens its collections for loans to instructors and cadets. To this end also it maintains a considerable display of portraits and paintings, battle flags and other exhibits in various buildings on the post. Some of these paintings and flags can be seen by the public in the Library, the Cadet Chapel, and in Grant Hall.

The West Point Museum was established in 1854 but its collections actually date back to 1777. After the Battle of Saratoga in October of that year, much of the ordnance captured from the British was sent to West Point. A little later, part of the famous Great Chain stretched across the Hudson at West Point to bar navigation of the river to British men-of-war was stored here.



Medal of Honor Room

Throughout the first half of the 19th century the custom of sending trophies of war and objects of national historic interest to the Military Academy was maintained. In 1843, for example, the Secretary of the Treasury presented West Point with a brass culverin 6 pounder that had been given to the Continental Congress by Lafayette. After the close of the Mexican War in 1847, Gen. Winfield Scott sent large numbers of captured flags, cannon, and other war trophies to the Military Academy.

In 1848, the Secretary of War formally directed in the name of the President that West Point be the "depository of the trophies of the successful victory of our arms in Mexico." The authorities realized that permanent provision was needed for the ever-growing collections, and in 1854 they officially created the Ordnance and Artillery Museum, and established it on the third floor of the Academy, a building erected in 1838 on the site of the present East Cadet Barracks. Custodianship of relics, however, was not the new museum's only mission; for most of the next century it served as the laboratory for cadet instruction under the Department of Ordnance.

In 1909 the Museum was moved to the Administration Building where it remained until 1958. It was removed from the Department of Ordnance in 1948 and placed on an independent status. A full-time director was appointed in 1949 and given a professional staff.

The West Point Museum has probably the largest collection of military items in the Western Hemisphere. Unlike most military museums the story it tells is not confined to a national scene. One gallery is devoted to the development of military institutions and the art of war from the days of the Romans until the present; while others deal with ordnance, logistics, medals and decorations and kindred aspects of the military history of the Western World. The visitor is introduced to the important developments in tactics, to the Great Captains of History, and to the everyday life of the soldier. He is given to understand something of the impact on warfare of such historic events as the Industrial Revolution and nuclear fission.

The visitor's understanding of such matters is heightened by an extensive use of dioramas and full scale models. The visitor can, for example, stand behind a palisade of the days of the Indian Wars in America, or walk through a portion of a World War I trench. He can view episodes in important battles from Cynoscephalae in the year 197 B.C. to Gettysburg of 1863. In keeping with developments in other American museums, the West Point Museum has endeavored to fulfill its historical mission by treating, in part at least, with intangible cultural concepts and movements as well as with tangible objects.

OFFICE OF RESEARCH

Director of Research: COL. John S. Howland

Deputy Director and Chief, Evaluation and Analysis Division: LTC James R. Kintz

Chief, Institutional Research Division: Claude F. Bridges

Chief, Administrative Services and Data Support Division: John W. Houston

Research Psychologists: 1LT. Arthur E. Wise, Alexander A. Longo, John D. Kraft

The Office of Research, USMA, a part of the Superintendent's special staff, is charged with the responsibility for institutional research projects conducted at the Military Academy. Of prime importance to the office is the systematic program to determine to what extent USMA is uniquely effective in educating and developing young men for careers in the Regular Army. This program includes an appraisal of the new cadets admitted each year in terms of values, interests, and commitment to a profession—a career in the Regular Army. In addition, the impact of United States Military Academy activities and programs on cadet characteristics and behavior is continually assessed with particular emphasis on determining changes in opinions, attitudes, and interests over the four-year period.

The Office of Research provides certain services in support of other USMA offices. Perhaps one of the most important of these services is advice and assistance to officers and cadets involved in research projects. The Office of Research not only provides a source of funding projects, it also provides professional consultant service whereby technical advice and assistance is given in all aspects of research from the design of a project to presentation of a final report. In addition, the Office of Research provides a central library of research done at the Military Academy, acts as a clearing house for research information, and will provide a central data bank of information regarding candidates, cadets, and graduates.



COUNSELING AND ADVISING

The Office of the Dean, the Academic Departments, the Department of Tactics, Chaplain, Surgeon, Treasurer, Registrar, and Upper Class Cadets are available at all times to assist and offer guidance to cadets.

The Commandant is responsible for the overall counseling and administration of cadets. He exercises this function directly through Company Tactical Officers of the Department of Tactics, Cadet Officers, the Cadet Hostess, and through referral to the academic counselors in the Office of the Dean, faculty members, Chaplain, Surgeon, or Treasurer. Each Company Tactical Officer is responsible for the administration, training, welfare, and morale of his cadet company. Through daily, personal contact the Tactical Officer is able to provide advice and guidance in overcoming personal problems that do not require professional care. Professional care is also available and is provided by Cadet Chaplains, the Mental Hygiene Consultation Service, and the Neuropsychiatric Clinic at the USMA hospital. These services are all available on a voluntary basis as well as by referrals from Company Tactical Officers. Assistance on social problems and financial matters is available through the Cadet Hostess and the Treasurer, USMA, respectively.

Career counseling is also the responsibility of the Commandant, jointly through the Company Tactical Officer and the Office of Military Instruction. Admissions information is the responsibility of the Director of Admissions and Registrar. The Dean of the Academic Board, assisted by his counseling staff and the faculty, is responsible for advising and counseling cadets on course validation, selection of electives and the scheduling and organizing of an academic program.

The Department of Law, through its Staff Judge Advocate responsibilities, is available to cadets who have need for legal assistance or advice. Guidance on problems of personal finance is provided by the Company Tactical Officers, the USMA Treasurer, and the faculty members of the Social Science Department who teach Personal Finance and insurance to upperclass cadets.

The Scholarship Committee of the Academic Board provides extensive personal guidance and counseling to cadets who wish to compete and can qualify for post-graduate scholarship and fellowship programs.

GRADUATE CIVIL SCHOOLING

With the advance in modern technology and the expanding world-wide commitments of the Army has come an ever increasing requirement for Army officers to extend their educational backgrounds by attendance at civilian graduate institutions. In September of 1967, more than 300 graduates of the Military Academy were pursuing advanced degrees at 61 different universities in the academic disciplines of the Biological Sciences, Business, Engineering, Physical Sciences and Social Sciences. It is anticipated that approximately 70 percent of Academy Graduates who remain on active duty will attend graduate school under the auspices of either the Early Graduate Schooling program, the Civil Schooling program or on a Scholarship-Fellowship.

Early Graduate Schooling Program

Distinguished Graduates of the Military Academy, the top 5 percent of a class in general order of merit, are eligible for graduate schooling leading to the masters degree within the first 5 years of service. The distinguished Graduate may elect to attend graduate school directly from West Point or defer entry until a later time.

Civil Schooling Program

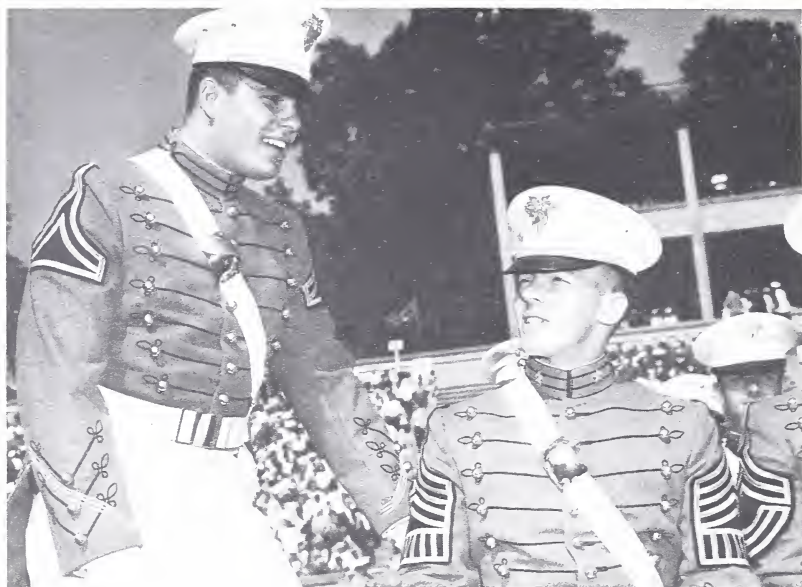
Those graduates who are qualified can anticipate selection for attendance at graduate school on a master's degree program or in certain cases a doctoral program, between their fourth and tenth year of military service.

Rhodes Scholarships

From 1923, when cadets of USMA first began to compete, to 1967, 48 Rhodes Scholarships have been awarded to Academy graduates who attended Oxford as Army or Air Force officers on active duty.

Elections for Rhodes Scholarships are held every year in December for entrance into Oxford in October of the following year. The scholarships are for a minimum period of 2 years study; a third year may be awarded if the Rhodes scholar presents a plan of study acceptable to his service and to the Rhodes trustees.

Cadets desiring to compete for a scholarship must be accredited by the Academic Board, which screens them carefully. A Committee of Selection in each State recommends two candidates every year to a District Committee for six States. The District Committees each select four individuals from the candidates selected by the State committees. Candidates may apply either in the State in which they live or in the State in which they have received at least 2 years of their college education.



The basis of selection is that section of Cecil Rhodes' will in which are mentioned the four groups of desired qualities: (1) Literary and scholastic ability and attainments; (2) qualities of manhood, truth, courage, devotion to duty, sympathy for and protection of the weak, kindliness, unselfishness, and fellowship; (3) exhibition of moral force of character and of instincts to lead and to take an interest in his schoolmates; (4) physical vigor as shown by fondness for and success in manly sports.

The selection is not made, however, on any system of averaging up a man's qualifications. The first two groups of qualities are most important, and committees are particularly interested in distinction of intellect and character giving promise of outstanding achievement in later life. Rhodes hoped that the scholar would "esteem the performance of public duties as his highest aim."

Olmsted Scholarships

The George Olmsted Foundation currently awards annually two scholarships to graduates of the Military Academy for 2 years' study at a foreign university in other than an English speaking country. Officers are considered for scholarships upon completion of a minimum of 3 years of service. The Foundation makes the selection from names submitted for consideration to the Department of the Army by the Academic Board. Selection criteria are scholastic, including linguistic ability, and

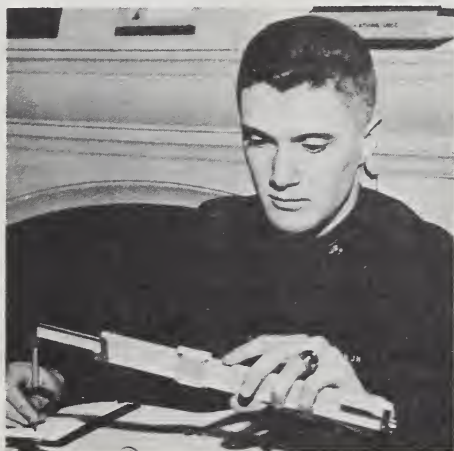
traits of character and leadership demonstrated at West Point and in the military service after graduation. Universities attended by Military Academy graduates under this program have included those in Geneva, Grenoble, Heidelberg, Brussels, Tokyo, Freiburg, Paris, Lyons, Madrid, Bonn, and Sao Paulo.

National Science Foundation Fellowships

Since 1961, cadets have been permitted to compete for National Science Foundation Graduate Fellowships. These fellowships, which are awarded for periods of 1 to 2 years, are open to graduates of all accredited institutions. Selection is based on academic records, recommendations regarding each applicant's ability scores achieved in examinations designed to test scientific aptitude and achievement, and other evidence of potential ability for scientific study or work. Graduate studies may be pursued at a university of the Fellow's choice. Through 1967, a total of 18 cadets have been awarded fellowships and 51 cadets have received honorable mention.

Oak Ridge Institute of Nuclear Studies Fellowships

The U.S. Atomic Energy Commission has established special fellowships in nuclear science and engineering to encourage promising students to undertake graduate studies in these fields at a university of their choice. Selection of fellows is based on academic grades, breadth of science and engineering courses completed, recommendations, Scientific Aptitude Examination results, and career objectives. Since 1964, a total of 20 Fellowships have been awarded to Cadet applicants.



Service Life

This brief comment on service life is designed primarily to advise the prospective candidate that graduation from the United States Military Academy is but the first step in the mental, moral, physical, and professional preparation of a commissioned officer in the Regular Army of the United States.

The mission of the United States Military Academy is to develop within each cadet those qualities and attributes essential to his progressive and continued development as an officer of the Regular Army, a profession endowed with rich tradition and heritage.

An officer's military career will include assignments which provide increasingly challenging leadership responsibilities. These assignments will be augmented with postgraduate military and civilian schooling. The assignment pattern is designed to prepare him for his role as a senior officer at a level which will make maximum use of the training and experience received throughout his career.

An officer leads. He teaches. He guides. He counsels. He works with men and ideas. He is in a demanding and responsible field which involves advanced technology, sophisticated weapons, and the international implications of many of his decisions. As a result, the officer today must have a higher intellectual capacity and educational level than ever before.

An officer is given major responsibility at a much earlier age than in most comparable civilian careers. A general career plan consists of four major periods.

Basic Military Development: This period includes the first eight years of commissioned service. During this period the officer receives branch schooling; specialist schooling such as airborne, ranger, or aviation training; combat arms detail; troop duty; and instructor duty. Approximately 70 percent of recent graduating classes can expect to attend advanced civil schooling in order to obtain advanced degrees, depending upon requirements for specialized skills and education. The top 5 percent of each graduating class may opt for advanced civil schooling at any time up to 5 years after graduation. The officer may choose the course of study and the college or university at which he will pursue graduate studies leading to a Master's Degree. During the Basic Military Development period, the officer becomes well-grounded in the tactics, techniques, and technical requirements of his branch and practices leadership and the techniques of command.

Intermediate Professional Development: This period normally includes the ninth through the fifteenth years of service. Troop command, staff assignments, schooling, and a variety of assignments of all levels of

command typify this period. Eligible officers may attend the Command and General Staff College, the Armed Forces Staff College, and, if not already attended, graduate civil school. This period is designed to broaden the officer's understanding of the overall role of the United States Army and to further his professional development.

Advanced Development: This period usually includes the sixteenth through the twenty-third years of service. The officer will be performing in high level staff and command positions during these rewarding years. Outstanding officers will be offered the opportunity to attend Senior Service Colleges such as the Army War College, the National War College, The Industrial College of the Armed Forces, or one of the three foreign War Colleges. Near the end of this period truly outstanding officers are selected for promotion to the grade of General Officer.

Major Professional Contribution: This period normally includes the twenty-fourth through the thirtieth years of service. It is during this period, when the officer is at the peak of his military career, when the officer makes his major professional contribution. His command and staff positions at this time normally will be of the highest responsibility determined by the officer's experience and ability.

The entire military career is one of challenge, satisfaction, and service to country and fellow man. It extends the officer to the limit of his abilities, provides the opportunity to assume positions of important leadership, and instills a sense of pride in the role the officer plays in the Army's portion of our national defense.

"Yours is the profession of arms
the will to win . . . the sure knowledge
that in war there is no substitute for
victory, that if you lose, the nation will
be destroyed, that the very obsession of
your public service must be duty,
honor, country."

*General Douglas MacArthur, May 12th,
1962, On the occasion of farewell
address to the Men of West point*



Admissions

ADMISSIONS OFFICE

Director of Admissions and Registrar: Mr. John I. Woodruff

Associate Director: MAJ. David C. Young, II, Inf

Executive Officer: MAJ. Robert B. Turnbull, Inf

Admissions Officers: MAJ. Charles E. Johnson, Arty, for Arizona, California, Idaho, Montana, Nevada, Oregon, Utah, and Washington

CPT. Edward M. Crowley, Inf, for New York, Vermont, New Hampshire, Maine, Massachusetts, Rhode Island, and Connecticut

CPT. Francis C. Fishburne, Jr., Arty, for New Jersey, Delaware, Indiana, Maryland, Ohio, Pennsylvania, West Virginia, and Washington, D.C.

CPT. James S. Mathison, Armor, for Alabama, Florida, Georgia, South Carolina, North Carolina, Mississippi, Kentucky, Virginia, and Tennessee.

CPT. Francis C. Egan, Inf, for Arkansas, Colorado, Kansas, Louisiana, New Mexico, Oklahoma, Texas, and Missouri

CPT. Robert J. Nicholson, AIS, for Illinois, Iowa, Michigan, Minnesota, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming

LT. Herbert C. Mudie, for Alaska, Hawaii, and all other overseas points, Coordinator for the USMA District Representative Program

General

In one major respect the requirements for admission to the Military Academy differ from those of a civilian college or university. A young man who desires to enter the Academy must first obtain from an authorized source permission to be examined for appointment to the Military Academy. Receipt of this permission is called a nomination. Having received a nomination, a candidate must undergo examinations to determine his academic, medical, and physical aptitude qualifications. If determined fully qualified in these three areas by the Military Academy Academic Board, the candidate is then authorized to receive a Cadetship. Selection (appointment) of those fully qualified candidates to fill cadetships for the class of 1973 is dependent on the type of nomination(s) the candidate holds and the number of vacancies to be filled.

It is important that prospective candidates make their interest in attending the Military Academy known to appropriate nominating sources as early as possible. The spring of the junior year in secondary school is ideal; however, most nominating sources will consider later requests.

Requirements

In order for a young man to be eligible for appointment to the Military Academy, he must meet the following requirements:

Age. On 1 July of the year he is to be admitted a candidate must have attained the age of 17 years and must not have reached the age of 22.

Citizenship. A candidate must be a citizen of the United States at the time of entry. (Foreign students nominated by mutual agreement between the United States and the countries concerned are exempt from this requirement.)

Marital Status. A candidate must never have been married. A cadet may not marry until he has graduated from the Academy.

Character. Each candidate's record must show positive evidence that he is responsible, trustworthy, emotionally stable, and of good moral character.

Motivation. A candidate must have a strong desire to become a cadet and pursue a military career. Experience has indicated that lack of motivation frequently results in failure to remain at the Academy.

Potential Leadership. Each candidate's record must include information concerning the effectiveness of his personality and the extent to which he has participated in school and community affairs.

Physical Condition. A candidate must be physically fit. He must successfully undergo qualifying medical and physical aptitude examination before he may be appointed.

Scholastic. A candidate's secondary school academic record, to include his performance on specified College Entrance Examining Board Tests, must show adequate preparation and indicate he has the potential to succeed in the academic curriculum at the Military Academy. Details are discussed in the following sections.



PREPARATION

ACADEMIC

General

The kind and amount of preparation a candidate brings to the Academy are of vital importance to his successful pursuit of the academic courses at West Point. Once the academic year begins, the pace is rapid and basic knowledge of fundamental secondary-school subjects is assumed. The entering cadet who is well prepared, therefore, finds himself in an enviable position.

The large majority of candidates admitted to the Military Academy enter directly from secondary schools. Those who have graduated in the top portion of their high-school classes and have attained good grades in their mathematics and English courses should be able to qualify academically for admission. Experience has shown that in order to pursue successfully the academic courses at the Military Academy, it is essential that a candidate should have completed 4 years of English, at least 3 years of mathematics but preferably 4, a year of laboratory science, and a year of United States History. The candidate's scholastic record must show adequate preparation in these respects in order for him to qualify for admission. Furthermore, his preparation should include additional courses in the mathematical sciences and the humanities. In addition, candidates are encouraged to submit for validation consideration College Entrance Examination Board Advanced Placement Test results.

Candidates unable to obtain appointments for admission to the Military Academy immediately following graduation from secondary school are encouraged to attend a civilian college or university pending receipt of an appointment to USMA. The undergraduate courses taken by the candidate should be substantial ones which will further prepare him for the rapid pace and high standards of academic accomplishment that are required at the Military Academy.

For the guidance of prospective candidates and their counselors the recommended preparation in English, mathematics, foreign languages, sciences, and United States History is shown in the following paragraphs.

English

Composition

Grammar, spelling, and punctuation.

Types of paragraphs and methods of developing paragraphs.

Organization of themes.

The techniques of summarizing.

Methods of research and use of the library.

Practice in speechmaking.

Literature

Ability to read with reasonable speed and good comprehension.

Familiarity with the reading and interpretation of major forms of literary expression: poetry, drama, the short story, the novel, and the essay.

Some knowledge of representative American and English literature, to include several plays of Shakespeare.

Mathematics

General

In order to succeed in mathematics at USMA, it is essential that the candidate have completed at least 3 years of college preparatory mathematics to include algebra, geometry, and trigonometry as outlined below. A candidate's scholastic record will not be considered qualifying for admission if it is deficient in any of the foregoing respects. It is especially important that the USMA applicant be studying mathematics in the year of school immediately preceding his intended enrollment at West Point, as this will facilitate his rapid adjustment to the demanding requirements at the Academy. A fourth year of college-preparatory mathematics is urged for all who have the opportunity for such instruction in their precollege academic training. Moreover a fourth year is *essential* for those who wish to study mathematics at West Point beyond the minimum required for graduation: see the section in the Academic course comments pertaining to the Advanced Study Programs.

The necessary scope of preparation in algebra, geometry, and trigonometry is given in the following sections:

Algebra

Emphasis in this area is placed on the following qualifications: (1) firm grounding in basic concepts and definitions; (2) a facility with basic techniques; and (3) the ability to apply logical analysis to the solution of problems. The candidate should be prepared in the following:

Applications of the fundamental operations.

Special products and factors.

Operations with fractions.

Radicals; fractional and negative exponents.

Systems of linear and quadratic equations.

Rectangular coordinates; the graphing of linear and quadratic equations in one and two variables.

Ratio, proportion, variation.

Common logarithms and applications.

Progressions, arithmetic and geometric.

The binomial theorem; the binomial formula with fractional and negative exponents.

Mathematical induction.

Elementary numerical trigonometry.

Geometry

As with algebra, careful preparation in the fundamentals of plane geometry and selected topics from solid geometry is necessary. The candidate should possess: (1) a knowledge of the basic concepts, definitions, and theorems of plane geometry; (2) an acceptable understanding of the nature of direct and indirect proof, and a facility with careful deductive reasoning as evidenced by his ability to prove standard theorems; (3) familiarity with the geometric properties of common plane figures; (4) a knowledge of spatial relationships, particularly those pertaining to lines and planes in space; and (5) familiarity with the definitions and geometrical properties of prisms, pyramids, cylinders, cones and spheres. The candidate should be prepared in the following:

Congruency theorems, and related theorems on triangles.

Inequalities of lines and angles.

Parallel and perpendicular lines.

Properties of quadrilaterals.

Circles: chords, central angles, arcs, tangents, secants.

Concurrent lines.

Similar triangles.

Areas of polygons.

Constructions.

The area of a circle as a limit.

Relations of lines and planes in space.

Definitions and properties of prisms, pyramids, cylinders, cones and spheres.

Trigonometry

In this subject the following qualifications are emphasized: (1) a knowledge of the concept of function and precise definitions of trigonometric functions of any angle; (2) thorough familiarity with the basic trigonometric identities; and (3) ability to apply logical analysis to the solution of problems. The candidate should be prepared in the following:

Angles and their measure, standard position.

Trigonometric functions of angles and real numbers.

The Unit Circle.

Graphs of functions in rectangular and polar coordinates.

Applications of logarithms to trigonometry.

Fundamental identities, trigonometric equations.

Double and half-angle formulas.

Product, sum and difference formulas, and applications.

Solutions of oblique triangles, law of cosines and law of sines.

DeMoivre's Theorem, complex numbers.

Advanced Programs

The Military Academy offers advanced programs in mathematics during the first two years, including from 6.0 to 11.5 credit hours of mathematics in extra (advanced) courses beyond those required for graduation from USMA. These courses are offered initially to selected cadets whose pre-USMA academic record shows: (1) high quality of performance in the standard preparation outlined above in algebra, geometry and trigonometry; (2) not less than 4 years of college-preparatory mathematics including elementary plane analytic geometry; (3) active study of mathematics during the final year before entering the Military Academy. If a cadet meets these requirements and is assigned to an advanced program, he must also achieve high standing in mathematics during his early months at West Point in order to remain in the program.

Foreign Languages

Preparation

Two or three years of high-school study of any foreign language will normally prove to be a helpful background for any of the languages taught at West Point. Those interested in taking one of the advanced language courses would do well to take 3 or 4 years of the same language (French, German, Russian, or Spanish) before entering the Academy. For those interested in studying Portuguese, previous courses in Latin and/or Spanish are advisable. For those desiring

study Russian, courses in either Latin or German, or preferably both, are recommended. (If previous Russian study is possible, it would, of course, provide the best preparation.) Regardless of the language studied, applicants should concentrate on the basic organization of the language, including word forms and functions and sentence structure; on basic vocabulary, to include the common idiomatic expressions; and on accurate pronunciation and proper intonation in word groups and sentences. Courses offering extensive practice in speaking and aural comprehension, without ignoring the fundamentals

of the language, should provide excellent preparation for the courses at the Military Academy.

Standard Program

Standard courses in six modern languages are offered at West Point: Chinese, French, German, Portuguese, Russian, and Spanish. Each cadet studies one of these languages during his first 2 years at the Academy. Cadets are normally assigned to study the language of their choice; but it is sometimes necessary to assign a cadet to the language of second choice, in cases where quotas are oversubscribed.

Advanced Program

Accelerated and Advanced courses are conducted (during the same time and in lieu of the standard courses) in French, German, Russian and Spanish, for those who qualify in a special placement examination consisting of several written parts, a dictation, and aural comprehension test, a passage to be read aloud, and oral replies to a number of simple questions in the language. A minimum of 2 years of high-school study of the language or 1 year of college study is the prerequisite for consideration for the advanced course. Cadets who have completed 2 years of high-school study but who fail to qualify for the advanced course may normally take the accelerated (intermediate) course in the same language.

Science

Preparation should include, as a minimum, a standard secondary school course (including laboratory) in general science, physics, or chemistry. Experience has indicated the desirability of including all three courses in secondary-school preparation.

History

"Preparation should include, as a minimum, a standard secondary school course in American History. Additional history will be helpful. Satisfactory completion of appropriate college level work affords the opportunity to validate required history courses and substitute therefor other standard or elective courses."

Expansion of the United States.

The Civil War.

Economic development of the United States.

Growth of American social and cultural patterns.

International Relations.

Physical Conditioning

During the first 2 months at West Point, physical demands on the new cadet are strenuous. Experience has shown that the new cadets, who prior

to their admission to USMA have conditioned themselves physically, are best able to meet the vigorous daily requirements. In an effort to be in top physical condition, candidates for West Point should strive to attain the physical condition required for a vigorous team sport. Heavy physical exercises, cross-country running to strengthen the legs and wind and swimming should be practiced. Emphasis should also be placed on a variety of vigorous competitive and individual sports rather than on a single favorite activity. Further, it is beneficial for a candidate to have learned basic swimming and to be able to swim at least 50 yards.



NOMINATION

General

Each cadetship at the Military Academy is allocated by law to a specified Member of Congress, to the Governor (or Commissioner) of a U.S. Territory, or to the Secretary of the Army. When a cadetship becomes vacant, due to graduation or other causes, the nominating authority nominates individuals to fill the vacancy. The congressional authority to whom a vacancy is allocated transmits to the Department of the Army the names of up to six young men to fill the vacancy and indicates the method to be used in selecting the candidate to be appointed to the cadetship.

Congressional Nominations

Cadetships allocated to Members of Congress and Commissioners or Governors are termed *Congressional* and are listed below:

Vice President	5
100 Senators (5 each).	500
435 Representatives (5 each).	2175
District of Columbia Commissioners	5
Canal Zone Governor	1
Puerto Rico Resident Commissioners/Governor	6
Guam, Virgin Islands, American Samoa Governors	1
Total	2693

The Vice President nominates from the United States at large. United States Senators and Representatives-at-Large nominate from their respective states at large. U.S. Representatives, other than those elected at large, nominate from their districts. The Commissioners of the District of Columbia nominate from among the residents of the District. The Governor of the Canal Zone nominates from among the sons of civilians residing in the Canal Zone, and from among sons of civilian personnel of the U.S. Government and the Panama Canal Company residing in the Republic of Panama. The Governor of Puerto Rico must nominate a native of Puerto Rico to fill his single cadetship. The Resident Commissioner nominates from among residents domiciled in Puerto Rico to fill the five cadetships allocated to him. The Governors of Guam, of the Virgin Islands and of American Samoa nominate from among the sons of U.S. citizens or nationals residing on their respective Islands.

As most Congressional Authorities conduct interviews and tests before selecting their nominees, it is important that each year young man interested in entering the Military Academy apply for consideration to his authorized nominating sources at least one year prior to the time he expects to enter the Academy (July).

Congressional nominating authorities specify to the Department of the Army, the method to be used in making the final selection of the candidate to fill the vacant cadetship. The most common methods are described below:

Principal-Alternate Method. Members of Congress using this method may nominate six candidates, one being named as principal, one as first alternate, one as second alternate, one as third alternate, one as fourth alternate, and one as fifth alternate. The first alternate, if qualified, will be admitted if the principal fails; the second alternate, if qualified, will be admitted if the principal and first alternate fail; and so on for succeeding alternates.

Competitive Method. Members of Congress, when making their nominations for each vacancy, authorize the Academic Board, USMA, to select the best qualified of the nominees. Such nominees are termed "Congressional Competitors."

Army Nominations

The Secretary of the Army's annual allocation of cadetships, termed ARMY, is distributed to specific categories below for the class entering in July 1969.

Presidential	100
Members of the Regular Army (Enlistments)	85
Members of the Army Reserve Components (Enlisted)	85
Sons of Veterans	20
Honor Military and Honor Naval Schools	13
Sons of Persons Awarded the Medal of Honor	Unlimited

Appointments to vacancies within each of the Army categories are awarded to best qualified candidates within each category on a competitive basis. Each Army candidate, with the exception of those from the Regular Army category, must complete all required College Board examinations on or before the December 1968 test administration. Failure to do so will cancel his nomination. Results of later College Board administrations (January or March 1969) will not be considered except in cases where the candidate holds one or more Congressional Nomination(s) in addition to an Army nomination, and then only for those Congressional nominations. Regular Army nominees are authorized to submit with their records the results of January 1969 College Board tests. A detailed discussion of the competitive nomination categories follows below.

Presidential:

The Presidential category is reserved by law for the sons of career military personnel—enlisted, warrant and commissioned—of the Army, Navy, Air Force, Marine Corps and Coast Guard, whether active, retired,

or deceased. The term career includes members of the Reserve Components currently serving eight years or more of continuous active duty (other than active duty for training) and retirees receiving either retired or retainer pay. Note: Sons of Reservists retired while *not* on active duty are ineligible. These nominations are administered in Headquarters, Department of the Army. Interested young men should make application by letter to The Adjutant General, ATTN: AGPB-M, Department of the Army, Washington, D.C. 20315, no later than 1 November 1968. An adopted son is eligible if he was adopted prior to his 15th birthday: a copy of the order of court decreeing adoption, duly certified by the clerk of the court, must accompany the application. Letters requesting nomination should include the following:

Name, address, and date of birth of applicant.

Name, Grade, Service Number, Component and Branch of Service of the parent.

Retired or Deceased (furnish date and copy of retirement orders or casualty report).

Enlisted men—Attach statement prepared by personnel officer listing date of enlistment, date of expiration of enlistment, component and branch of service.

Regular Army:

Nomination of candidates to fill the annual vacancies held for members of the Regular Army is outlined in detail in AR 350-55. This publication may be obtained from the nearest Army installation; by writing to Headquarters, Department of the Army, ATTN: AGPB-M, Washington, D.C. 20315; or by writing to The Director of Admissions and Registrar, West Point, N.Y. 10996. All Regular Army nominees are required to attend the USMA Preparatory School at Fort Belvoir, Virginia, during the year prior to entering the Military Academy. For further information concerning the school turn to page 132.

Army Reserve:

Nominations to fill the annual vacancies held for members of the Reserve Components are outlined in detail in AR 350-55. This publication may be obtained from the nearest Army installation; by writing to Headquarters, Department of the Army, ATTN: AGPB-M, Washington, D.C. 20315; or by writing to the Director of Admissions and Registrar, West Point, N.Y. 10996.

Sons of Veterans Quota:

Cadetships are provided for the sons of deceased Armed Forces Personnel who were either killed in action or died of wounds or injuries received or disease aggravated by active service, or have a service-con-

nected disability rated at not less than 100 percent resulting from wounds or injuries received or diseases contracted in active service or pre-existing injury or disease aggravated by active service. The Veterans Administration determines eligibility and its decisions are final and binding on the Department of the Army. Application should be made by letter addressed to The Adjutant General, ATTN: AGPB-M, Headquarters, Department of the Army, Washington, D.C. 20315. Application must be made prior to 1 November 1968. The letter of application should state the full name, date of birth, and address of the applicant (complete service address should be given if the applicant is in the Armed Forces); and the name, grade, service number, and last organization of the veteran parent, together with a brief statement concerning the time, place, and cause of death or details of disability as appropriate. The claim number assigned to the veteran parent's case by the Veterans Administration should also be furnished.

Honor Military and Honor Naval Schools:

Cadetships are provided annually for graduates of Honor Military and Honor Naval schools. Each such school, designated as an honor school by annual Department of the Army or Department of the Navy inspections, is invited to nominate three candidates annually from among its honor graduates. The cadetships will be filled by selecting the best qualified candidates regardless of the school from which nominated. The candidates need not be members of the graduating class of the current year, but in each instance the head of the school must certify that the candidate (1) has been a member of the ROTC units at least two years; (2) has been, or is to be graduated within the upper third of his class; (3) has demonstrated in his academic, extracurricular, and ROTC activities that he possesses outstanding qualities of leadership, character and aptitude for the Military Service; (4) has shown proficiency in not less than 15 units in subjects prescribed for admission to the Military Academy; and (5) has met all other requirements of law and regulations prescribed for admission to the Military Academy. Honor School nominations must be received by The Adjutant General, ATTN: AGPB-M, Headquarters, Department of the Army, Washington, D.C. 20315, before 1 November 1968.

Sons of Persons Awarded the Medal of Honor:

Sons of recipients of the Medal of Honor may be nominated and appointed to the Military Academy. The administration of these nominations is in the Department of the Army. Application by those eligible should be made by letter to The Adjutant General, ATTN: AGPB-M, Headquarters, Department of the Army, Washington, D.C. 20315. The letter should contain the applicant's full name, address, and date of

birth (complete service address should be given if the applicant is in the Armed Forces) ; the name, grade, and branch of service of the parent ; and a brief statement of the date and circumstances of the award. There is no limitation upon this category and all candidates who are found fully qualified will be admitted as cadets.

Allied Cadets

Young men from the allied countries listed below may be designated by their governments to take the entrance examinations and, if qualified, be authorized to receive instruction at the Military Academy. Requirements for the admission, advancement from class to class, and graduation of allied cadets are the same as those for cadets of the United States. While a cadet, they receive the same pay and allowances as cadets appointed from the United States. They are not entitled, however, by reason of their graduation, to appointment in the Armed Forces of the United States.

Republic of the Philippines. One Philippine National, from among those designated by the President of the Republic of the Philippines, selected on the basis of his academic record and College Board test scores, is authorized to enter with the new class each July.

American Republics. A total of not more than 20 citizens of the American Republics may receive instruction at the Military Academy at any one time. Selection will be determined in the same manner as for nominees from the Republic of the Philippines. Not more than three persons from any one country may be cadets at the same time.

Other Allied Countries. From time to time, citizens of other allied countries have been permitted to attend the Military Academy upon specific authorization of the United States Congress. Selection will be determined in the same manner as for nominees from the Republic of the Philippines.

Progress Reports on Qualifications

In order to keep candidates informed concerning their qualification for admission. The Adjutant General, Department of the Army, will issue progress reports on academic, medical, and physical aptitude qualifications, when such information is complete.

Early Notification of Admission

Candidates who hold principal nominations to the Military Academy will be notified of acceptance as soon as they meet all entrance requirements. Additionally, the most outstanding among other qualified candidates will be notified early after completed evaluation and approval by the Academic Board.

WHEN TO TAKE QUALIFYING EXAMINATIONS (CLASS OF 1973)

CATE- GORY	NOMINATION	COLLEGE BOARD EXAMINATIONS ¹			PHYSICAL APTITUDE EXAMINATION		MEDICAL EXAMINATIONS ³	
		Not Later Than			Not Later Than		Not Later Than	
Congress- sional	Competitor or competing alternate Principal-Alternate.....	Dec. 1968	Jan. 1969	Mar. 1969	Jan. ² 1969	Mar. 1969	Jan. 1969	Mar. ⁴ 1969
				X X		X X		X X
Army	Presidential.....	X			X		X	
	Regular Army.....	X			X		X	
	Army Reserve.....	X			X		X	
	Sons of Veterans.....	X			X		X	
Special	Honor Military Schools.....	X			X		X	
	Sons of Persons Awarded Medal of Honor.....			X				
	Allied.....			X		Not Required		

¹ College Board Tests required of all nominees: Scholastic Aptitude Test, English Composition, Math Level I or II.

² Candidates tested in January will have PAE results used for all nominations held at that time.

³ All candidates must take a qualifying medical examination within the year prior to admission at any authorized Army, Navy, or Air Force Medical Facility listed in this catalogue by individual arrangement or at the designated test site at the time indicated.

⁴ The March examinations are for the Congressional candidates nominated after the January test date and for medical and physical aptitude examinations for Presidential candidates residing outside the continental United States

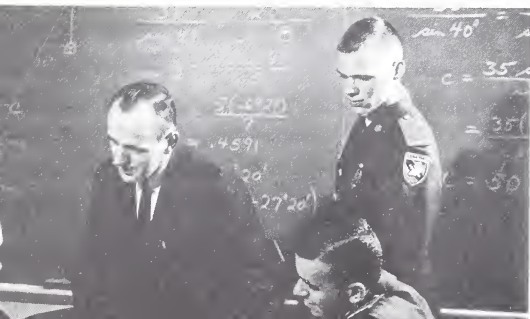
USMA PREPARATORY SCHOOL

The Preparatory School is operated by the U.S. Army at Fort Belvoir, Va. Enlisted men on active duty wishing to compete for appointment to the Military Academy may be assigned for intense academic, physical and military training to prepare them for competitive appointments and their initial year at the Academy. The entrance requirements for the Preparatory School closely parallel those of USMA. All applicants must satisfy minimum academic and medical standards as outlined in AR 350-55 before transfer to the Preparatory School is authorized, and all must either be nominated, or eligible to compete, for admission to the Military Academy. Approved applicants pay no tuition, are members of the service, retain rank held at time of entrance to USMAPS, receive normal military pay and allowances, and are subject to the Uniform Code of Military Justice.

The training course runs from mid-August through May and enrollment at the start of the course is a primary requirement. The academic program includes a comprehensive review of all high school English and Mathematics and an introduction to college level instruction in English and Mathematics. During the school year a physical training and extensive sports program conditions the student for the West Point Physical Aptitude Examination and for the rigorous life at the Academy. The military program encompasses all of the students day-to-day activity other than academic instruction by emphasizing training in leadership, discipline, and fundamental soldier skills and qualities.

Attendance at USMAPS is mandatory for all applicants competing for Regular Army appointments. Qualified enlisted reservists and others may be selected for attendance at the Preparatory School upon application. Detailed information concerning application, selection and training at USMAPS may be obtained by writing directly to the Commandant, USMAPS, Fort Belvoir, Va. 22060.

Reserve component personnel not on active duty, interested civilians, and members of other services should write to The Adjutant General, ATTN: AGPB-M, Department of the Army, Washington, D.C. 20315. General information reference the Preparatory School may be secured by forwarding a letter of inquiry to the Commandant, USMAPS.



*Beginning of the year
Mathematics review*

QUALIFICATION

General

The Adjutant General, Department of the Army will send to each candidate his official letter of nomination. This letter will authorize the candidate to take the academic, medical, and physical aptitude examinations required to establish qualification for appointment to the Military Academy to fill the vacancy for which nominated. The Adjutant General will include with his letter, detailed instructions as to tests required, examination dates, and the personal and scholastic data he must send, or cause to be sent, to the Military Academy.

January and March Examining Centers

A candidate's letter of nomination from The Adjutant General, Department of the Army, will instruct him to report to a military installation near his home for testing on Wednesday, either 8 January 1969 or 26 February 1969. There he will be given the opportunity to take the qualifying examinations required for admission to the Military Academy. Presidential, Reserves, Honor School, and Sons of Veterans must, however, take the required College Board tests no later than the December test administration. The Medical and Physical Aptitude Examinations will be administered first and normally should be completed by Friday. No pre-registration for the College Board tests is necessary for candidates eligible to take the College Board tests at military installations in January or March.

During the examination period living accommodations and meals will be provided to candidates at a minimal cost. Except for active duty servicemen, travel and personal expenses will be met by the candidate.

The authority to report for testing in January or February should not deter a candidate from arranging to take his qualifying medical examination at some earlier time. It is to the candidate's advantage to do so in order that he may determine his chances for qualification as early as possible. The same consideration applies for his taking the required College Board tests. A candidate who has previously completed his medical examination and has taken, or is registered to take, the required College Board tests in his local area, should be able to return home on Thursday following the administration of the Physical Aptitude Examination.

The following military installations will conduct March 1969 USMA Candidate testing commencing 26 February 1969. Those installations marked by an asterisk (*) will also conduct testing beginning 8 January 1969. The test site for each candidate will be designated by The Adjutant General in the letter of nomination. Under emergency conditions only request for changes in test site should be directed to The Adjutant General, ATTN: AGPB-M, Headquarters, Department of the Army, Washington, D. C. 20315.

ALASKA

*Anchorage—Fort Richardson

ARIZONA

*Cochise County—Fort Huachuca

CALIFORNIA

*San Francisco—Presidio of San Francisco

COLORADO

*Denver—Fitzsimons GH

GEORGIA

*Atlanta—Fort McPherson

*Columbus—Fort Benning

HAWAII

*Tripler Army Hospital

ILLINOIS

*Highland Park—Fort Sheridan

INDIANA

*Indianapolis—Fort Benjamin Harrison

KANSAS

*Leavenworth—Fort Leavenworth

KENTUCKY

*Hardin County—Fort Knox

*Hopkinsville—Fort Campbell

MARYLAND

*Laurel—Fort George G. Meade

MASSACHUSETTS

*Ayer—Fort Devens

MISSISSIPPI

*Biloxi—Keesler AFB

MISSOURI

*Waynesville—Fort Leonard Wood

NEW JERSEY

*Wrightstown—Fort Dix

NORTH CAROLINA

*Fayetteville—Fort Bragg

OKLAHOMA

*Lawton—Fort Sill

PENNSYLVANIA

*Carlisle—Carlisle Barracks

*Phoenixville—Valley Forge GH

PUERTO RICO

San Juan—Fort Brooke

SOUTH CAROLINA

*Columbia—Fort Jackson

TEXAS

*El Paso—William Beaumont GH

*San Antonio—Fort Sam Houston

UTAH

*Ogden—Hill AFB

VIRGINIA

*Fairfax County—Fort Belvoir

WASHINGTON

*Tacoma—Fort Lewis

CANAL ZONE

Fort Clayton

GERMANY

Heidelberg, USAH

JAPAN

Camp Zama

GH—General Hospital

AH—Army Hospital

AFB—Air Force Base

NAS—Naval Air Station

Failure of any candidate to complete the required examinations according to the prescribed schedule will cause his nomination to be nullified. Similarly, the nomination of a Congressional principal or an alternate will be nullified unless he can establish that the reason for his failure to take the examination by 1 March 1969 was due to sickness or other unavoidable circumstance. In each such case of unavoidable absence, the principal or alternate may request of The Adjutant General permission to take the tests in June 1969, at West Point. Conflicts with academic

schedules and athletic contests are not considered unavoidable and do not constitute justification for postponement of the examinations.

Candidates holding competitive nominations may not have the testing postponed. Failure of a competitor to complete his testing on the date scheduled for any reason, including sickness or injury, will nullify the nomination.

June Examination at West Point

A special administration of all required examinations will be conducted at West Point in June 1969. This administration is limited to candidates nominated after the March examination period, and to principal or alternate candidates who for unavoidable causes were unable to take the March tests. During the June examination period, meals and living accommodations will be furnished at a nominal cost; however, travel costs to and from West Point will be borne by the candidate.

Academic Qualification

General: A candidate's academic qualification is determined by the military Academy's Academic Board based on the following:

1. A review of his entire scholastic record in secondary school (and college, if appropriate) to determine that he has the aptitude and demonstrated capability to succeed in the demanding curriculum required of all cadets.
2. Acceptable performance on the following College Entrance Examination Board tests:
 - Scholastic Aptitude Test
 - English Composition Achievement Test
 - Level I or Level II Mathematics Achievement Test*
3. Recommendations from the Principal, counselors, teachers, and other school officials in position to judge accurately the academic performance and potential of the candidate.

Scholastic Record

The candidate must complete the enclosed School and Personal History forms *promptly* and transmit them to the Military Academy. A secondary-school transcript, including grades for the latest completed term, should also be forwarded by the School. If a candidate is in college, a transcript covering his college work must also be forwarded to the Military Academy.

*Scores on either the Level I or Level II Mathematics achievement test will be accepted by the Military Academy. No adjustment is made on the scores because of any possible difference in the degree of difficulty of the two tests.

College Board Examinations

Each candidate must submit to the Military Academy results of the College Entrance Examining Board Tests for Scholastic Aptitude, English Composition, and Level I or Level II Mathematics. (See summary—"When To Take Qualifying Examinations.")

A candidate who desires to take the tests in December 1968, or in January or March 1969 is encouraged to do so in his local area.

At the time he registers for the tests, he must designate the Military Academy as an institution to receive the results.

If a candidate desires that results from tests previously taken be considered, he must contact the College Entrance Examining Board, Princeton, N.J., or Berkeley, California (as appropriate), and request that such results be sent to the Military Academy. He must enclose one dollar (\$1) with his request to cover handling and mailing costs.

The *best* results received will be given primary consideration, consistent with the candidate's category of nomination. A candidate will be notified of success or failure as soon as the test results, plus other required academic data, are received and evaluated at the Military Academy.

In addition to the local College Board examining sites, the College Board tests will be conducted at the designated military testing station indicated on the candidate's letter of nomination on 11 January and 1 March 1969.

Expenses incident to taking the College Board tests, whether in a local area or at a military test site, will be borne by the candidate.

Physical Aptitude Examination

General: Each candidate is required to establish his qualification in Physical Aptitude. Qualification is determined by an examination designed by the Military Academy to measure strength, coordination, muscular power, endurance, speed, and agility. It is given at the military test sites in January and February 1969. For candidates nominated after March, the test will be given at West Point in June 1969.

Qualification is determined on the basis of total performance in five or six physical performance tests (see examples Appendix B). A poor performance on a single test will not necessarily result in disqualification.

A candidate who has qualified in Physical Aptitude in previous years is not required to reestablish his qualification during the current year unless as a competitive candidate, he desires to take the test again in order to establish a higher test qualification score. Decision in this regard rests with the candidate and no recommendation will be offered

by the Military Academy. Primary consideration will be given to the latest test results.

A candidate who is found disqualified on the January 1969 tests will be authorized no further testing for nominations he holds at that time. Should he receive an additional nomination prior to the February test, he will be authorized to retake the examination at the time of the regularly scheduled February 1969 examination. A candidate nominated after February 1969 will be authorized to take the examination in June at West Point.

Preparation for Examination: Candidates are advised to prepare for this examination by engaging in vigorous activities such as running, general conditioning exercises, and competitive games rather than in practicing on specific test items.

Medical Examination

General: Every candidate, regardless of the type or source of his nomination, must undergo a qualifying medical examination during the twelve months preceding 1 July 1969. This examination may be scheduled by the candidate at one of the authorized medical facilities listed in Appendix C at any time following receipt of his nomination; or he may take the examination at the test site designated in his letter of nomination at the same time he reports for the Physical Aptitude Examination. Regardless of the number of nominations a candidate receives, he need take the medical examination only once. Qualification, or unacceptability, determined by that examination will stand for all nominations held. A General Outline of Medical Consideration is also found in Appendix C.

Procedures: As soon as possible after receipt of his letter of nomination, the candidate is encouraged to make arrangements with the nearest Authorized Medical Testing Facility (Army hospital preferred) to take the medical examination. To do this, he should contact the Physical Examining Section of the Facility; preferably in writing, requesting an appointment to take the *QUALIFYING MEDICAL EXAMINATION* for candidates to the Military Academy. Travel and personal expenses incurred in taking the examination are the responsibility of the candidate. When the examination is completed, all forms and records will be sent by the Examining Facility to The Surgeon General, Department of the Army, for evaluation. NOTE: (The examining facility does not have the authority to make a qualification determination on any candidate for the Military Academy.) Within eight weeks following the date of examination, the candidate should receive notification of the results from The Adjutant General, Department of the Army.

A candidate wearing contact lenses must remove them at least 72 hours

prior to reporting for the medical examination. At the time of the examination, it is important that he report all previous injuries and operations in order to assist the examining officer and to obviate possible uncertainty in the findings reported.

Should a candidate be unable to make satisfactory arrangements before his designated test period in January or February 1969, he will be afforded the opportunity to take the medical examination at that latter time. Similarly, a candidate who is required to report to West Point for the June 1969 qualification examinations will also be authorized to receive the medical examination during the same period.

Qualification: Final qualification is determined by The Surgeon General, as announced by The Adjutant General. A candidate who is qualified will not be required to take another medical examination for subsequent nominations. If he is found disqualified due to a non-remediable condition, no further testing as a candidate for the Military Academy will be authorized. If the disqualification is determined remediable, he will be notified by The Adjutant General, Department of the Army, of the corrective measures he must take in order to be reexamined. All inquiries pertaining to final medical qualification should be directed to The Adjutant General, Department of the Army, ATTN: AGPB-M, Washington, D.C. 20315.

Medical Examinations Taken for Other Service Academies

The Medical Qualifying examination for the Military, Naval and Air Force Academies is the same although the standards differ somewhat due to the commissioning requirements of various services. If a candidate for the Military Academy desires to have copies of his examination forwarded for consideration by the Navy or the Air Force, *he must request the Chief of the Examining Facility to do so at the time he is examined.* For the Naval Academy a candidate should request copies be sent to: The Board of Medical Examiners, United States Naval Academy, Annapolis, Maryland. In the case of the Air Force Academy a candidate should request copies be sent to: The Director of Admissions, United States Air Force Academy, Colorado Springs, Colorado. A candidate who takes a qualifying medical examination for another Service Academy and desires that it be used in support of his Military Academy nomination, must take steps analogous to those indicated above. The copies should be sent to: The Surgeon General, Department of the Army, ATTN: Physical Standards Branch, Washington, D.C. 20315. It is the candidate's responsibility to insure that the examination results are so forwarded.

Determination of Qualification

All candidates have their academic, physical aptitude, and medical qualifications determined in the same way. For Principal-Alternate candidates, simple qualification is all that is necessary because their order of consideration has been predetermined by the nominating authority. For CONGRESSIONAL and ARMY competitors, their Academic and Physical Aptitude records are evaluated and weighted in order to develop an order of merit within each nominating group. This weighting is made by giving 60% to scholastic factors, 30% to leadership potential and 10% to the results of the Physical Aptitude Examination.

As soon as a qualification in any of the three test areas—Academic, Physical Aptitude, Medical—is determined the candidate is notified by The Adjutant General, Department of the Army.

For ARMY competitive candidates, academic qualification will be determined upon receipt of the required scholastic background data, plus the results of the College Board tests taken not later than the December 1968 Test Administration. (Not later than January 1969 for Regular Army Candidates.)

A candidate who takes the Physical Aptitude Examination in January 1969 will have that score applied to all nominations held at that time. Should he subsequently receive a new nomination and desire to retake the test in March, he will be authorized to do so; however, the results of this retake will apply to the new nomination only. A candidate may elect to have the January results apply to the new nomination.

A candidate who has been notified of his qualifications in the three test areas, need not retake any examinations for an additional nomination received before July 1969. Nevertheless, as a CONGRESSIONAL candidate, he is authorized to do so as outlined in the paragraphs above. In all cases, the latest information concerning test results and related qualification data, available at the Military Academy, consistent with cutoff dates, are given primary consideration in the final determination of qualification.

Disqualification

A candidate who fails to submit the required College Board results, taken on or before the time specified for his category of nomination, automatically nullifies nomination. His candidacy will no longer be considered. Similarly, a candidate who fails to take the Medical and Physical Aptitude Examinations on or before the March 1969 Test Period will cause his nomination to be nullified unless he is authorized to be tested, at West Point, in June 1969.

When, in the processing of a candidate's record, it is determined that

he is unacceptable academically or in physical aptitude, he will be so notified. No further processing of his records will be conducted and no further testing will be authorized for those nominations held at that time. Should he subsequently secure an additional nomination, then his file will be reopened and he will be authorized to submit additional test data in support of this new nomination only.

A candidate who is found to be medically unacceptable will not be authorized further testing as a candidate to the class entering in July 1969.

Nominees Who Were Candidates in a Prior Year

A nominee who was a candidate in a prior year and found to be fully qualified but not selected as an appointee, may have the prior academic and physical aptitude examination results used in determining his current qualification. He *MUST* retake the medical examination. In addition, he must submit to the Military Academy transcripts of his academic work through his latest completed term in college. If he holds a competitive nomination, he may retake any or all of the required College Board and the Physical Aptitude Examinations.

A candidate (except an ex-cadet) once found academically qualified for admission will *normally* be considered academically qualified under any subsequent nomination. Exception to this policy will be made by the Academic Board on an individual case basis.

A nominee who was a candidate in a prior year and found to be unacceptable academically and/or in physical aptitude must retake the required College Board tests and/or Physical Aptitude Examination before his qualification can be determined. If previously qualified in either of these two areas, he is not required to retake the test for that area.

Appointment

Each fully qualified candidate nominated before March 1969, and selected for admission with the Class of 1973, will be notified of his appointment status by The Adjutant General, Department of the Army. Such appointees will be directed to report to West Point on 1 July 1969.

Those post-March candidates who are tested at West Point in June will receive notification approximately 24 June 1969.

Qualified Alternates and Qualified Competitors

If it is determined that the number of appointed candidates to the Class of 1973 will not fill the available vacancies allocated for the class, the Academic Board will recommend for appointment

candidates who have been found fully qualified but who failed to receive the appointment to the particular vacancy for which they were nominated. In making its selection, the Board will consider the following factors: academic ability based upon the candidate's entire scholastic record; character and other personal attributes, as shown by statements furnished by principals, teachers, and other school officials; evidence of exceptional capabilities; and leadership potential. *No application by a candidate is necessary. All fully qualified candidates without appointments will be considered.* Candidates appointed under this procedure are not charged to the CONGRESSIONAL or ARMY quotas under which they were originally nominated.

Reapplication

A candidate who qualified for appointment, but is not selected for a class entering the Academy, is encouraged to reapply for a nomination in a subsequent year. Policies as to whether or not the results of previously taken examinations will be considered in such cases are set forth in the section on Examinations.

Guidance for Appointees—Class of 1973

Preparatory Physical Conditioning: Because of the nature of new cadets' training during their first two months at West Point, physical demands are necessarily great. Experience indicates that those cadets who, prior to admission, have conditioned themselves physically are best able to meet the training requirements. The candidate should strive for the degree of conditioning required for vigorous team sports. He is advised to practice heavy physical conditioning exercises (such as pull-ups, sit-ups, and push-ups) until many repetitions of the exercises can be performed without severe physical strain. In addition, he should strengthen his legs and wind by regular cross-country running and by fast climbing on steep slopes. A program of vigorous competitive sports should be followed, with emphasis on variety of sports rather than on one favorite activity. Any candidate in doubt about his physical-conditioning methods would be well-advised to consult a high school or college physical education department.

Deposit Upon Entrance: Because the initial wardrobe of uniforms and equipment requires a heavy expenditure of funds during this first year, the appointee should make a deposit of \$300 prior to his entrance to the Military Academy. Deposits should be made prior to 1 June except for those candidates selected after 30 May. When such deposit is in the form of a check, it should be made payable to the

Treasurer, USMA, and mailed to the Treasurer, USMA, West Point, New York 10996. The cancelled check will serve as a receipt.

Travel Expenses: New cadets who were members of the Armed Services on active duty are entitled to permanent change of station allowances as provided under the Joint Travel Regulations. New cadets who were not previously members of the Armed Services on active duty are entitled to the permanent change of station allowances for travel actually performed, not to exceed the official distance from the place which the cadet certifies was his actual permanent place of abode, home or school, at the time such travel to the Academy commenced. The allowance for travel at personal expense is 6 cents per mile. Payment of the travel allowance is usually made in the month of September and is credited to the cadet's account. Should the deposit upon entrance plus the travel allowance exceed \$300, the cadet may submit a request to have the excess over \$300 returned to his parents or legal guardians. No action is taken on any request for the return of excess deposit until the travel allowance has been paid. The request for return of excess allowance to parents or legal guardians must be initiated by the cadet.

Policy Concerning Service Obligations: A cadet who enters the United States Military Academy directly from a civilian status and takes an oath of allegiance as a member of the United States Corps of Cadets assumes a military service obligation of six years. A cadet who is separated or whose resignation is accepted prior to the commencement of his third academic year at the Military Academy will be discharged in accordance with service regulations. However, if a cadet enters the Military Academy from a Regular or Reserve Component of any of the services and resigns or is separated prior to the commencement of his third academic year, he will revert to his former status.

With the commencement of the Second Class Academic Year, a Second or First Classman who is separated prior to completing the course of instruction, except for physical disqualification, unfitness or unsuitability, normally will be transferred to the Reserve Component in an enlisted status and be ordered to active duty for not less than two years. Exceptions to this requirement may be made in cases of cadets who are separated for deficiencies which are not considered willful. Any First Classman who completes the course of instruction at the Military Academy and declines to accept an appointment as a commissioned officer will be transferred to the appropriate Reserve Component in an enlisted status and ordered to active duty for four years.

In accordance with an agreement between the Department of Defense and the Director, Selective Service System, notification will be made to

the local Selective Service Board advising of the change in the individual's status in each case where a cadet is separated from the Academy.

A cadet incurs a five-year active service commitment upon graduation from the Military Academy and appointment as a commissioned officer in the Regular Component of one of the armed services.

Oath of Allegiance: Each appointee (except an allied cadet) takes the following oath of allegiance to the United States in a formal ceremony on the day of admission:

I. Oath of Allegiance

I, _____
do solemnly swear that I will support the Constitution of the United States, and bear true allegiance to the National Government; that I will maintain and defend the sovereignty of the United States, paramount to any and all allegiance, sovereignty, or fealty I may owe to any State or country whatsoever; and that I will at all times obey the legal orders of my superior officers, and the Uniform Code of Military Justice.

II. Engagement for Service

I, having been appointed a cadet of the United States Military Academy, do hereby engage, with the consent of my parents or guardian if I am a minor, unless sooner separated from the Academy:

a. To complete the course of instruction at the United States Military Academy:

b. If tendered an appointment as a commissioned officer in a Regular component of one of the armed services upon graduation from the United States Military Academy, to accept such appointment and to serve under such appointment for not less than five consecutive years immediately following the date of graduation.

c. If an appointment as provided in II b above, is not tendered or if permitted to resign prior to the sixth anniversary of my graduation, to accept an appointment as a commissioned officer in the Army Reserve, Navy Reserve, or the Air Force Reserve and remain therein until such sixth anniversary.

III. Marital Status

I am not married and never have been married.

IV. Service Obligations

I have read and understand the "Policy Applicable to Cadets Who Are Separated from the Military Academy prior to Graduation," on the reverse side of this form.

(Sign your full name)

Sworn to and subscribed before me at West Point, New York, this 1st day of July, nineteen hundred and sixty-nine.

(Signature of Official Authorized to Administer Oaths)

Appendices

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THE HONOR CODE

The development of character and integrity in the members of the Corps of Cadets is a basic objective of the Academy. The Cadet Honor Code and System are officially recognized as primary means through which this objective is attained.

From the earliest days of recorded history it has been universally recognized that unquestioned integrity is an essential trait of the military leader. Colonel Sylvanus Thayer, the father of the Military Academy, determined that the Academy should produce leaders whose foundation was built on honor, integrated with a strong sense of discipline and excellence of knowledge. Since his day the role of honor has been maintained by the Corps and fostered by the authorities of the Academy. General Douglas MacArthur, shortly after World War I, was instrumental in formalizing the Honor Code and System and making them officially sanctioned means of building character. Today, the Honor Code is a most cherished possession of the Corps of Cadets and of the "Long Gray Line" of graduates.

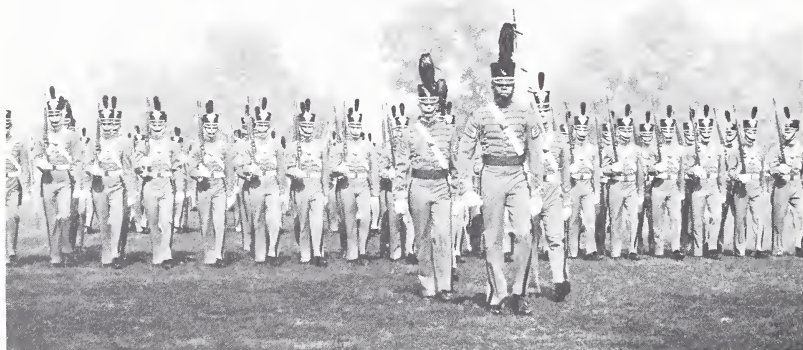
The Honor Code has never outgrown its original and simple meaning—that a cadet will not lie, cheat, or steal. The Code requires complete integrity in both word and deed of all members of the Corps and permits no deviation from those standards. Not only is the cadet expected to tell the truth on all occasions but also to avoid quibbling or evasive statements. In the classroom a cadet does his own work. Under no circumstances will he take unfair advantage of his classmates. The maintenance of these high honor standards is the responsibility of each cadet, and each cadet is expected to report himself or any other cadet for violations of the Honor Code. These exacting standards are rigidly enforced, and any intentional violation by cadet is cause for separation from the Military Academy.

The Honor System is an integral part of the Honor Code and is the method by which the Honor Code is applied in the highly organized life of a cadet. As an example, cadets may account for their absence from their rooms simply by marking their absence cards. This marking is accepted as the cadet's word that his absence is authorized, and that he will take no advantage of this privilege. Cadets are also often required to indicate by signature that they have complied with official instructions. These devices are part of the Honor System that requires the cadet to make decisions based on his sense of honor many times a day during his 4 years at the Academy. In this respect the Honor System serves as a training vehicle to instill within each cadet the desire to abide by the precepts of the Honor Code.

For its success the Honor Code depends upon the Corps. The Cadet Honor Committee, elected by the Corps, monitors the operation of the Honor Code and System. It explains to the Corps the principles upon which the Code is based and guards against practices inconsistent with that Code. Thus, this Committee insures that the high standards of the Code are maintained and transmitted, undiluted, from class to class. Its procedures follow a set pattern, and its members have responsible authority. The Committee has no punitive powers, its functions being entirely investigative and advisory. If the Committee reports a cadet to the Commandant for an honor violation, the Commandant takes appropriate official action to insure that the standards of the Code are upheld while protecting the rights of the cadet in accordance with the provisions of the Uniform Code of Military Justice.

One of the Honor Committee's most important tasks is to supervise the indoctrination of the New Cadets in the principles of the Code. This indoctrination is both intensive and continuous and includes informal discussions as well as scheduled lectures. New Cadets are expected to adhere to the same standards as other cadets under the Honor Code. It is soon apparent to New Cadets that all members of the Corps share an inherent pride in upholding the exalted position of the Code. This observation, coupled with the indoctrination program, raises the varying standards of honor of an entering class to the uniformly high plane which the Corps has established and expects from its members.

The devotion of the Corps to the Honor Code is especially strong. In the opinion of both cadets and graduates, it is a particularly vital part of their education, training, and character-building at the Academy and makes a lasting impression on them.



EXAMPLES OF ITEMS ON THE PHYSICAL APTITUDE EXAMINATION

A combination of the following tests, which result in the candidate using all of his physical facilities, constitutes the Physical Aptitude Examination of the Military Academy.

- (1) Medicine Ball Put. Put a six pound medicine ball for distance using the same movement as required for a shot put.
- (2) Chinups. From the arm hang position on a horizontal bar, palms toward the face, elevate the body until the chin is above the bar.
- (3) Pullups. Same as chinups except palms away from the face.
- (4) Situps. Perform as many situps as possible in two minutes.
- (5) Hurdle Run, Zig Zag Run, and Dodge Run. Run through a maze of hurdles on a gymnasium floor for time.
- (6) Shuttle Run. Run between two turning blocks, 25 yards apart, to cover distances from 100 to 400 yards.
- (7) Squat Thrust. Continuous movements for 20 seconds from the standing position to the squat, to the leaning rest, to the squat, and back to the standing position.
- (8) Vertical Jump. Jump for height.
- (9) Standing Broad Jump. One jump for distance.
- (10) Three Broad Jumps. Three successive broad jumps for distance.
- (11) Rope Climb. Climb a regular gymnasium rope as high as possible in seven seconds using hands and feet or hands alone, starting from a standing position.
- (12) Instep Touch. From the arm hang position on a horizontal bar, bring the insteps up to touch the bar.
- (13) Hop, Step and Jump. With a ten foot start to the takeoff line, take a hop, a step, and a jump in a continuous movement for distance.
- (14) Basketball Throw. Throw a regulation basketball for distance from either a standing or kneeling position.
- (15) Basketball Pass. Pass a basketball against a wall for speed and accuracy.
- (16) Block Shuttle Run. In a shuttle run, pick up blocks and place them on designated spots.
- (17) Dips. Raising and lowering oneself on parallel bars with the arms.
- (18) Pushups. Standard pushups starting from the leaning rest position.

MEDICAL STANDARDS

Medical Examination and Disqualifications

The medical examination is the means whereby an individual's medical qualification for appointment to the service academies is determined. Medical examinations are conducted at designated examining centers (Army, Navy, Air Force) located throughout the United States and at designated overseas bases. One standardized examination is used by all service academies. Examinations to be considered as final qualifying examinations must be taken on or after 1 July of the year preceding the year of admission. Examinations taken prior to 1 July of the year preceding the year of admissions are acceptable only as preliminary examinations, and the applicant will be required to complete another medical examination should he receive a formal nomination. The applicant must contact the medical facility and request an appointment to have the *qualifying medical examination*. Facilities authorized to conduct qualifying medical examinations are listed on page 157 of this catalogue.

Medical Examinations Taken for Other Service Academies

The medical qualifying examination for the Military, Naval, and Air Force Academies is the same although the standards differ somewhat due to the commissioning requirements of the three services. If a candidate for the Military Academy desires to have copies of his examination forwarded for consideration by the Navy or the Air Force, he must request the Chief of the Examining Facility to do so at the time he is examined. For the Naval Academy a candidate should request copies to be sent to: The Board of Medical Examiners, United States Naval Academy, Annapolis, Maryland. In the case of the Air Force Academy a candidate should request copies be sent to: The Director of Admissions, United States Air Force Academy, Colorado Springs, Colorado. A candidate who takes a qualifying medical examination for another Service Academy and desires that it be used in support of his Military Academy nomination must take steps analogous to those indicated above. The copies should be sent to: The Surgeon General, Department of the Army, ATTN: Physical Standards Branch, Washington, D.C. 20315. It is the candidates responsibility to insure that the examination results are so forwarded.

Review and Waiver Procedures

The results of all medical examinations are subject to review by the medical departments of the appropriate service. The reviewing authority for the U.S. Military Academy is The Surgeon General, Department of the Army. Within eight weeks following medical examination, the candidate should receive notification of the results. All inquiries pertaining

to final medical qualification should be directed to The Adjutant General, Department of the Army, ATTN: AGPB-M, Washington, D.C. 20315. The Navy and Air Force Academies are the reviewing authorities for their respective services. Medical qualification decisions made by the reviewing authorities are final. In this respect, where the disqualifying defect is subject to medical or dental correction, the candidate may be temporarily rejected subject to later certification by a physician or dentist that the defect has been corrected with complete restoration of function. Such certification must be in the hands of the reviewing authority as soon as possible, but in any case, no later than 15 March.

Applicant Actions

It is strongly recommended that applicants arrange for another person to drive them to the testing center. Certain tests may preclude driving for several hours after the examination is completed and results in unnecessary delays. Applicants who wear contact lenses must remove them a minimum of 72 hours prior to the examination.

Candidates are encouraged to undergo a thorough medical and dental examination by their private physician and dentist before pursuing nomination and before taking a qualifying medical examination. This will serve to identify obviously disqualified applicants or those who may have remediable defects which must be corrected, at the candidate's expense, prior to taking the qualifying medical examination.

It must be clearly understood that a medical and dental examination by the applicant's civilian physician and dentist is a preliminary and exploratory one *only* and cannot be considered as a qualifying examination. Only examinations given at Army, Navy or Air Force medical facilities are acceptable as a qualifying examination.

Special Medical Examination Considerations and Disqualifications

Disqualifying medical conditions as set forth below are for use as a guide by the physician and dentist in determining medical disqualification or remediable medical and dental conditions. Reference should be made to the regulations of the applicable service for specific details as to standards of medical fitness as pertain to the Army, Navy, or Air Force.

Medical History

The medical history will be compiled with particular care with elaboration where indicated. Full and complete documentation of all illnesses, injuries and operations which the applicant may have incurred is absolutely necessary since failure to do so may result in disappointment when medical disqualification is determined later. A history of familial diseases will be thoroughly investigated. Medical care which has signifi-

cantly affected the applicant's medical status must be documented and supported by statements from the attending physician or from hospital records concerning the medical care.

Height and Weight Standards

The weight standards as noted are necessarily arbitrary and as a general rule will not be waived. However, when a generally large bony structure and large well-distributed and proportioned muscle masses with little evidence of thick layers of subcutaneous fat account for the apparent excessive weight, exception to the standards may be granted. Underweight conditions will not be waived. Gross obesity is a disqualifying factor until such time as excess weight is lost. In any event, each case will be judged on its own merits. Heights should be measured to the nearest half inch. Standards of weight according to height are as follows:

Height (inches)	U.S. Military Academy		Navy and Air Force	
	Minimum	Maximum	Minimum	Maximum
64 (A)	105	183	112	160
65 (A)	106	187	115	165
66 (B)	107	191	115	176
67	111	196	119	180
68	115	202	122	186
69	119	208	127	191
70	123	214	131	197
71	127	219	135	202
72	131	225	139	208
73	135	231	143	215
74	139	237	147	219
75	143	243	151	224
76	147	248	155	229
77	151	254	159	235
78	153	260	162	240
79 (A) (C) .....	.....	.....	169	245
80 (A) (B) (C) .....	.....	.....	173	250

- (A) USMA—A range in height from 66" to 78" inclusive is required. A waiver for overheight or for up to 2" below the minimum height, may be considered by the Department of the Army provided the candidate possesses exceptional educational qualifications or has an outstanding military record, or has demonstrated outstanding abilities.
- (B) Air Force—Minimal height is 66 inches. Maximum is 80 inches. On the recommendation of the Superintendent USAFA, these standards may be waived.
- (C) USNA—Waiver for height up to 80" may be granted to a limited number of candidates with exceptional scholastic and leadership achievements.

Eyes and Vision Disqualifications

VISION

USMA

Any visual acuity must correct to 20/20 with glasses (See refractive error).

USNA

Uncorrected vision exceeding 20/20 each eye.

USAFA*

Uncorrected vision exceeding 20/20 each eye (See refractive error).

*Uncorrected far visual acuity up to 20/50 each eye which corrects to 20/20 with lenses will be considered qualifying for flying other than pilot.

MUSCLE BALANCE

- | | | |
|--|-----------------|--|
| 1. <i>Esophoria</i> over 15 prism diopters. | Not Applicable. | <i>Esophoria</i> over 10 prism diopters. |
| 2. <i>Exophoria</i> over 10 prism diopters. |do..... | <i>Exophoria</i> over 5 prism diopters. |
| 3. <i>Hyperphoria</i> over 2 prism diopters. |do..... | <i>Hyperphoria</i> over 1 prism diopter. |
| 4. Strabismus (Tropia) disqualifying for all candidates. | | |

COLOR VISION

Must be able to distinguish vivid red and vivid green.	Normal color perception.	Normal color perception.
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CYCLOPLEGIC REFRACTION

All candidates.	All candidates.	All candidates.
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REFRACTIVE ERROR

- | | | |
|---|-----------------|--|
| 1. MYOPIA
Exceeding — 5.50 diopters in any meridian. | Not Applicable. | Exceeding — .25 diopters in any meridian. |
| 2. HYPEROPIA
Exceeding + 5.50 diopters in any meridian. |do..... | Exceeding + 1.75 diopters in any meridian. |
| 3. ASTIGMATISM
Exceeding + or — 3.00 diopters. |do..... | Exceeding + or — .75 diopters. |
| 4. ANISOMETROPIA
Exceeding 3.50 diopters. |do..... | Exceeding 3.50 diopters. |

CONTACT LENSES

Removed 72 hours prior to examination.	Removed 72 hours prior to examination.	Removed 72 hours prior to examination.
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WAIVER

None allowed.	20/40 vision corrected to 20/20 and exceptional scholastic and leadership achievement.	Visual acuity not exceeding 20/200 correctible to 20/20 and outstanding academic or leadership achievement.
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Ears and Hearing Disqualifications

The auditory acuity of all candidates will be determined by the use of the audiometer. Maximum allowable loss in decibels and the frequencies noted is as follows:

HEARING LOSS							
(AMERICAN STANDARD CALIBRATION)							
FREQUENCY	500	1000	2000	3000	4000	6000	8000
	512	1024	2048	2896	2096	.....	8192
MAXIMUM LOSS IN DECIBELS							
Right Ear.....	15	15	15	*	40	*	*
				**	**	**	***
				***	***		
Left Ear.....	15	15	15	*	40	*	*
				**	**	**	***
				***	***		

**U.S. MILITARY ACADEMY*—Not standardized or no requirement.

***AIR FORCE ACADEMY*—3000, 4000 and 6000 frequency range will be tested. Average of 35 decibels for each ear at 3000, 4000, 6000, i.e., a total of 210 decibels for the six thresholds is disqualifying.

****NAVAL ACADEMY*—Hearing loss greater than 35 decibels at the 3000 frequency is disqualifying. Record the 4000 and 8000 frequency as disqualifying. Record the 4000 and 8000 frequencies for baseline only.

Both ears must be free from any disfiguring or incapacitating abnormalities. Other causes for rejection are: Existing perforations of the tympanic membrane regardless of etiology. Exostosis or other form of canal blockage resulting in examiner's inability to effectively view the tympanic membrane, may be cause for rejection.

Nasal Disqualifications

Any congenital or acquired lesion which interferes with the functions of the nasopharynx or eustachian tubes. Septal deviation, hypertrophic rhinitis, nasal polyps or other conditions which result in 50% or more obstruction to either airway or obstruction to drainage of any sinus. Allergic rhinitis not controllable by anti-histamines or by desensitization, or both is disqualifying for the U.S. Military Academy. History of acute or chronic sinusitis will be evaluated thoroughly and completely.

Lung and Chest Disqualifications

Tuberculosis active in past 5 years. Pneumothorax regardless of etiology or history thereof is disqualifying for the U.S. Military Academy. Spontaneous pneumothorax within past 3 years or history of repeated episodes is disqualifying for the Air Force and Naval Academies. Chronic bronchitis, bronchiectasis. Congenital malformations that result in reduced chest capacity with associated diminution of respiratory reserve, absence of the clavicle, ununited fractures of the clavicle that would interfere with carrying military equipment. Coccidioidomycosis unless healed without residual.

Allergic Disqualifications

Asthma or a history of asthma, except a history of childhood asthma with a trustworthy history of freedom from symptoms since the 12th birthday, is a cause for rejection. A history of allergic rhinitis past the 12th year, including those cases in which desensitization therapy has been initiated, will be evaluated thoroughly. In many cases a specialty consultation in allergy will be required. Also see Nasal Disqualifications.

Skin Disqualifications

Psoriasis, even if moderate in degree. Acne, moderately severe or resultant scarring severe enough to interfere with wearing of personal military equipment or disfiguring scarring. Chronic skin disease such as severe eczema or unsightly congenital markings. Bromidrosis which is more than mild. Pilonidal cyst if evidenced by presence of mass or discharging sinus. History of pilonidal cystectomy within the two years previous to examination is also disqualifying for the Air Force and Naval Academies. Extensive deep or adherent scars that interfere with movement or wearing of military equipment.

Heart and Vascular System Disqualifications

An electrocardiogram is required of all applicants. Electrocardiographic abnormalities will be evaluated to determine if an organic basis exists. A history of rheumatic fever will require a thorough investigation including detailed history, fluoroscopic examination of the heart and an X-ray film in addition to a careful general medical examination. All murmurs will be evaluated thoroughly and indicated as functional or organic in origin. Any evidence of organic heart disease is unequivocally disqualifying. All valvular disease of the heart, including that which has been improved by surgery. Blood pressure greater than 139 millimeters or diastolic pressure greater than 89 will be cause for extensive evaluation to determine if persistent hypertension exists. Hypertension evidenced by preponderant readings of 140-mm or more systolic or preponderant

diastolic pressure of over 90-mm. Heart rate greater than 100 on repeated examinations will be cause for further evaluation. Varicosities of any extremities if severe or symptomatic unless mild in degree or correctable by treatment.

Genitourinary System Disqualifications

Persistent albuminuria of any type to include so-called orthostatic albuminuria or the persistence of casts in the urine, even though the etiology cannot be determined, will be cause for rejection. Phimosis, epispadias, or pronounced hypospadias severe enough to interfere with micturition. Amputation of the penis, infantile genitalia, atrophy, absence, deformity or maldevelopment of *both* testicles, or undescended testicle of any degree unless surgically corrected. Chronic orchitis or epididymitis. Chronic kidney diseases. Repeated attacks of renal calculi. Absence of one kidney, regardless of cause.

Serologic Test

A serologic test for syphilis is required for all applicants.

Abdomen Disqualifications

Weakness of abdominal wall sufficient to interfere with function. Hernias of any type unless surgically corrected. History of operation for hernia within past 60 days is temporarily disqualifying. Chronic diseases of abdominal viscera. History of gastric or duodenal ulcer. Acute or chronic gallbladder disease. History of splenectomy for any reason other than trauma.

Orthopedic Disqualifications

Ununited fractures, old joint fractures with evidence of arthritis. Pes planus more than mild, symptomatic, or with marked bulging of the inner border due to rotation or eversion of the astragalus and any callosities. Pes cavus with clawing of the toes and calluses beneath the metatarsal heads can be cause for rejection. Hammertoes of such degree as to interfere with function or wearing of suitable footwear. Other conditions of the feet which would interfere with successful compliance with military routine. History of derangement of knee joint not corrected by surgery if symptomatic within one year preceding examination. Six months must elapse after knee surgery before final evaluation. Post operative instability, stiffness, traumatic arthritis, muscle atrophy or weakness will be thoroughly evaluated, and may be cause for rejection.

Spine and Musculoskeletal Disqualifications

Lateral deviation of the spine (scoliosis) from the midline of more than one inch. Old vertebral fractures. Curvature of the spine of any degree in which there is noticeable deformity when the applicant is

dressed. Spondylolisthesis. Gout. Deficient muscular development. Tuberculosis of spine, active or healed. Acute or chronic back problems which would interfere with routine military duties. History of herniated nucleus pulposus or surgical correction of such a condition is cause for disqualification.

Extremities Disqualifications

Total loss of either thumb. Loss of other digits sufficient to interfere with function. Loss of either great toe.

Neurological Disqualifications

History of head injury resulting in unconsciousness will be thoroughly evaluated. Lengthy periods of unconsciousness will require a complete neurological consultation to include electroencephalogram. Degenerative disorders, convulsive disorders, even though controlled by medication. Residuals of infection (polio, meningitis, etc.). Miscellaneous disorders such as tics, spasms and spina bifida, if associated with neurological manifestations. All periods of amnesia will be evaluated thoroughly and completely regardless of length. History of unexplained unconsciousness. Multiple episodes of syncope (fainting). Documented history of migraine headaches or chronic headaches of such a nature as to interfere with daily functions or requiring medical treatment. A history of multiple episodes of air sickness (air, sea, swing, train, or carnival ride), will be thoroughly evaluated and may be cause for rejection.

Psychiatric Disqualifications

History of emotional instability, psychosis, anxiety reaction or dissociative reaction. Pathologic personality types; other obsessive compulsive reactions or neurotic depressive reaction. Addiction to alcohol or drugs. Anti-social behavior. Sexual deviation. Immaturity reaction if marked; situational maladjustment. Multiple episodes of somnambulism after 10 years of age. Multiple episodes of enuresis (bedwetting) after 10 years of age unless proven to have an organic basis. Stammering or stuttering past the age of 10 years. History of attempted suicide. Other disorders of emotion, behavior, thought, intelligence, or mood, difficult to define, will be thoroughly evaluated and may be cause for rejection.

Endocrine and Metabolic Disqualifications

Diabetes mellitus is disqualifying for the U.S. Military Academy. Diabetes mellitus or history of diabetes mellitus in both parents is disqualifying for the Air Force and Naval Academies. Persistent glycosuria including renal glycosuria is disqualifying. Exophthalmic or adenomatous goiter, from any cause associated with toxic symptoms. History of thy-

roidectomy. History of partial thyroidectomy will be cause for thorough evaluation and may be disqualifying. Other endocrine or metabolic disorders which preclude satisfactory performance of duty or which would require long term treatment.

Dental Disqualifications

1. Diseases and abnormalities of the mouth:
 - a. Diseases such as cysts, tumors, osteomyelitis and other acute or chronic conditions which are not easily remedied and which will incapacitate the individual.
 - b. Loss of oral tissues sufficient to prevent replacement of missing teeth with a satisfactory prosthetic appliance.
 - c. Perforation(s) of the hard palate.
 - d. Harelip, unless satisfactorily repaired by surgery, and unsightly mutilations at the lip.
 - e. Fractures:
 - (1) Malunion of a fracture that interferes significantly with function.
 - (2) Ununited fractures.
 - (3) Any fracture in which an insert such as a plate, pin or screw was left in place for fixation and may be subject to easy trauma.
 - f. Deformities or conditions of the mouth, to include insufficient functionally opposed natural or artificial teeth or malocclusion, which interfere with mastication and swallowing of ordinary food, speech or breathing.
 - g. A skeletal relationship between the mandible and maxilla which will preclude future satisfactory prosthetic replacement, if necessary.
2. Teeth:
 - a. Carious teeth which are unfilled or improperly filled or restored.
 - b. Grossly disfiguring spacing of anterior teeth.
3. Appliances:
 - a. Prosthetic appliances below standards of design, construction and tissue adaption.
 - b. Lower prosthetic appliance which is not retained or adequately stabilized by sufficient serviceable natural teeth.
 - c. Orthodontic appliances attached to the teeth for continued treatment (retainer appliances are acceptable).

FACILITIES AUTHORIZED TO CONDUCT QUALIFYING MEDICAL EXAMINATION

ALABAMA

Daleville—Fort Rucker
Mobile—Brookley AFB
Montgomery—Maxwell AFB

ALASKA

Adak—U.S. Naval Station
Anchorage—Elmendorf AFB, Fort Richardson
Kodiak—U.S. Naval Station

ARIZONA

Chandler—Williams AFB
Cochise County—Fort Huachuca
Tucson—Davis-Monthan AFB

ARKANSAS

Blythesville—Blythesville AFB
Jacksonville—Little Rock AFB

CALIFORNIA

Alameda—U.S. Naval Air Station
Camp Pendleton
Edwards—Edwards AFB
El Centro—U.S. Naval Air Facility
Fairfield—Travis AFB
Ignacio—Hamilton AFB
Imperial Beach—U.S. Naval Auxiliary Air Sta., Ream Fld.
Lemoore—U.S. Naval Air Station
Lompoc—Vandenberg AFB
Long Beach—U.S. Naval Hospital
Los Alamitos (Long Beach)—U.S. Naval Air Station
Marysville—Beale AFB
Merced—Castle AFB
Moffett Field—U.S. Naval Air Station
Monterey—Fort Ord, U.S. Naval Air Facility
Oakland—U.S. Naval Hospital
Point Mugu—U.S. Naval Missile Ctr
Riverside—March AFB
Sacramento—Mather AFB
San Bernardino—Norton AFB
San Diego (Miramar)—U.S. Naval Air Station; (North Island)—Naval Air Station, U.S. Naval Hospital
San Francisco—Letterman GH
Santa Ana—U.S. Marine Corps Air Sta El Toro
Victorville—George AFB

COLORADO

Colorado Springs—USAF Academy
Denver—Fitzsimons GH, Lowry AFB

DELAWARE

Dover—Dover AFB

FLORIDA

Cecil Field—U.S. Naval Air Station
Homestead—Homestead AFB
Jacksonville—U.S. Naval Air Station, U.S. Naval Hospital
Key West—U.S. Naval Air Station
Panama City—Tyndall AFB
Pensacola—U.S. Naval Hospital
Sanford—U.S. Naval Air Station
Tampa—MacDill AFB
Valparaiso—Eglin AFB
Whiting Field—U.S. Naval Air Station

GEORGIA

Albany—Turner AFB
Atlanta—Fort McPherson, U.S. Naval Air Station
Columbus—Fort Benning
Glynco—U.S. Naval Air Station
Groveton—Fort Gordon
Hinesville—Fort Stewart
Valdosta—Moody AFB
Warner Robins—Robins AFB

HAWAII

Honolulu—Hickam AFB, Tripler GH

IDAHO

Mountain Home—Mountain Home AFB

ILLINOIS

Belleville—Scott AFB
Glenview—U.S. Naval Air Station
Great Lakes—U.S. Naval Hospital
Highland Park—Fort Sheridan
Rantoul—Chanute AFB

INDIANA

Indianapolis—Fort Benjamin Harrison
Peru—Bunker Hill AFB

KANSAS

Junction City—Fort Riley
Leavenworth—Fort Leavenworth
Olathe—U.S. Naval Air Station
Topeka—Forbes AFB
Wichita—McConnell AFB

KENTUCKY

Hardin County—Fort Knox

LOUISIANA

Alexandria—England AFB
New Orleans—U.S. Naval Air
Station
Shreveport—Barksdale AFB

MAINE

Bangor—Dow AFB
Brunswick—U.S. Naval Air Station
Limestone—Loving AFB

MARYLAND

Andrews AFB—U.S. Naval Air
Facility
Annapolis—U.S. Naval Academy
Camp Springs—Andrews AFB
Odenton—Fort George G. Meade
Patuxent—U.S. Naval Air Station

MASSACHUSETTS

Ayer—Fort Devens
Boston—Boston Army Base
Chelsea—U.S. Naval Hospital
Chicopee Falls—Westover AFB
Falmouth—Otis AFB
South Weymouth—U.S. Naval Air
Station

MICHIGAN

Grosse Ile—U.S. Naval Air Station
Gwinn—KI Sawyer AFB
Kincross—Kincheloe AFB
Mount Clemens—Selfridge AFB
Oscoda—Wurtsmith AFB

MINNESOTA

Minneapolis—U.S. Naval Air Station

MISSISSIPPI

Biloxi—Keesler AFB
Columbus—Columbus AFB
Meridian—U.S. Naval Auxiliary
Station

MISSOURI

Grandview—Richards-Gebaur AFB
Knob Noster—Whiteman AFB
Waynesville—Fort Leonard Wood

MONTANA

Glasgow—Glasgow AFB
Great Falls—Malmstrom AFB

NEBRASKA

Omaha—Offutt AFB

NEVADA

Las Vegas—Nellis AFB

NEW HAMPSHIRE

Portsmouth—Pease AFB, U.S.
Naval Hospital

NEW JERSEY

Lakehurst—U.S. Naval Station
Oceanport—Fort Monmouth
Wrightstown—Fort Dix, McGuire
AFB

NEW MEXICO

Alamogordo—Holloman AFB
Albuquerque—Kirtland AFB
Clovis—Cannon AFB
Roswell—Walker AFB

NEW YORK

Newburgh—Stewart AFB
New York—U.S. Naval Air Station
Plattsburgh—Plattsburgh AFB
Rome—Griffiss AFB
St. Albans, L.I.—U.S. Naval Hos-
pital
West Hampton Beach, L.I.—Suffolk
County AFB
West Point—U.S. Military Academy

NORTH CAROLINA

Camp Lejeune—U.S. Naval Hospital
Cherry Joint—U.S. Marine Corps
Air Station
Fayetteville—Fort Bragg
Goldsboro—Seymour Johnson AFB
New River—U.S. Marine Corps Air
Facility

NORTH DAKOTA

Minot—Minot AFB
Mekinock—Grand Forks AFB

OHIO

Columbus—Lockbourne AFB
Dayton—Wright-Patterson AFB

OKLAHOMA

Altus—Altus AFB
Burns Flat—Clinton-Sherman AFB
Lawton—Fort Sill
Oklahoma City—Tinker AFB

OREGON

Portland—Portland International
Airport

PENNSYLVANIA

Carlisle—Carlisle Barracks
Johnsville—U.S. Naval Air Facility
Philadelphia—U.S. Naval Hospital
Phoenixville—Valley Forge GH
Willow Grove—U.S. Naval Air
Station

RHODE ISLAND

Newport—U.S. Naval Hospital, U.S.
Naval Station
Quonset Point—U.S. Naval Air
Station

SOUTH CAROLINA

Beaufort—U.S. Marine Corps Air
Station, U.S. Naval Hospital
Charleston—Charleston AFB, U.S.
Naval Hospital
Columbia—Fort Jackson
Sumter—Shaw AFB

SOUTH DAKOTA

Rapid City—Ellsworth AFB

TENNESSEE

Clarkesville—Fort Campbell
Memphis—U.S. Naval Hospital,
U.S. Naval Air Station
Smyrna—Sewart AFB

TEXAS

Abilene—Dyess AFB
Amarillo—Amarillo AFB
Austin—Bergstrom AFB
Beeville—U.S. Naval Aux Air Sta-
tion
Big Spring—Webb AFB
Corpus Christi—U.S. Naval Hos-
pital, U.S. Naval Air Station
Dallas—U.S. Naval Air Station
Del Rio—Laughlin AFB
El Paso—William Beaumont GH
Fort Worth—Carswell AFB

Kingsville—U.S. Naval Air Station
Killeen—Fort Hood
Laredo—Laredo AFB
Lubbock—Reese AFB
San Antonio—Fort Sam Houston,
Lackland AFB, Randolph AFB
Sherman—Perrin AFB
Wichita Falls—Sheppard AFB

UTAH

Ogden—Hill AFB

VIRGINIA

Fairfax County—Fort Belvoir
Hampton—Langley AFB
Lee Hall—Fort Eustis
Norfolk—U.S. Naval Air Station
Old Point Comfort—Fort Monroe
Petersburg—Fort Lee
Portsmouth—U.S. Naval Hospital
Quantico—U.S. Marine Corps Air
Station, U.S. Naval Hospital
Virginia Beach—U.S. Naval Air
Station

WASHINGTON

Bremerton—USNH
Oak Harbor—U.S. Naval Air Station
Seattle—U.S. Naval Air Station
Spokane—Fairchild AFB
Tacoma—Fort Lewis, McChord
AFB

WYOMING

Cheyenne—Francis E. Warren AFB

DISTRICT OF COLUMBIA

Washington—Walter Reed GH

CANAL ZONE

Balboa—Albrook AFB
Fort Clayton
Rodman—U.S. Naval Station

CUBA

Guantanamo Bay—U.S. Naval Hos-
pital

ENGLAND

London—U.S. Naval Support Ac-
tivity
Middlesex—RAF West Ruislip

GERMANY

Heidelberg—USAH
Wiesbaden—Wiesbaden AB

GUAM

U.S. Naval Hospital

ITALY

Naples—U.S. Naval Support Activity

JAPAN

Camp Zama
Honshu—Tachikawa AB
Sasebo—Fleet Activities
Yokosuka—U.S. Naval Hospital

NEWFOUNDLAND

Argentia—U.S. Naval Station
Stephenville—Ernest Harmon AFB

PHILIPPINES

Luzon—Clark AFB
Subic Bay—U.S. Naval Station

PUERTO RICO

Aguadilla—Ramey AFB
San Juan—Rodriguez AH

SPAIN

Rote—U.S. Naval Air Station
Torrejon—AFB

GH—General Hospital, AH—Army Hospital, AFB—Air Force Base



BOARD OF VISITORS

The Board of Visitors to the United States Military Academy was created not long after the founding of the institution itself. On 1 July 1815, the Secretary of War, William H. Crawford, approved "A Regulation for the Government of the Military Academy" providing for the appointment of a Board to consist of five "competent gentlemen," under the presidency of the Superintendent. The Board was instructed to attend each of the annual and semiannual examinations at West Point and report thereon to the Secretary.

At present the Boards are appointed under the provisions of an Act of Congress approved 29 June 1948. This act specifies that a Board of Visitors shall visit the Military Academy each year and inquire into the state of morale and discipline, curriculum, instruction, physical equipment, fiscal affairs, academic methods, and other matters relating to the institution which the Board may decide to consider, and submit a written report to the President of the United States giving its views and recommendations pertaining to the United States Military Academy. The personnel of the Board, the Act provides, shall be as follows:

- a. The Chairman of the Committee on Armed Services of the Senate, or his designee;
- b. Three other Members of the Senate designated by the Vice President or the President pro tempore of the Senate, two of whom shall be members of the Committee on Appropriations of the Senate;
- c. The Chairman of the Committee on Armed Services of the House of Representatives, or his designee;
- d. Four other Members of the House of Representatives to be appointed by the Speaker of the House of Representatives, two of whom shall be members of the Committee on Appropriations of the House of Representatives;
- e. Six persons designated by the President.

BOARD OF VISITORS 1967

Appointed by the President of the United States: General James F. Collins, USA (Ret), President, American National Red Cross; Dr. Frederick L. Hovde, President, Purdue University; Frederick R. Kappel, Chairman of the Board, American Telephone and Telegraph Company (Ret); Dr. Frank A. Rose, President, University of Alabama; James A. Suffridge, President, Retail Clerks International Association, AFL-CIO; Major General Leif J. Sverdrup, USAR (Ret), Chairman of the Board, Sverdrup and Parcel and Associates.

Appointed by the Vice-President of the United States: Senator Jacob K. Javits; Senator John C. Stennis; Senator Strom Thurmond.

Appointed by the Speaker of the House of Representatives: Representative Glenard P. Lipscomb; Representative William H. Natcher; Representative Alexander Pirnie; Representative Olin E. Teague.

Ex-Officio Members of the Board: Senator Richard B. Russell (represented by Senator Thomas J. McIntyre); Representative L. Mendel Rivers (represented by Representative Lucien N. Nedzi).



ASSOCIATION OF GRADUATES

The Association of Graduates, USMA, is a voluntary membership organization open to all graduates of the Military Academy and to former cadets who were honorably discharged after at least one academic term at the Academy. Over 95 percent of the 19,310 living graduates, and many former cadets who did not graduate, are members.

The Association was founded at New York City in 1869 under the personal leadership of Brig. Gen. Sylvanus Thayer, USMA 1808, and Maj. Gen. Robert Anderson, USMA 1825, hero of Fort Sumter. Annual meetings have been held at West Point during June Week since 1870. Its purpose is "To acquire and disseminate information on the history, activities, objectives, and methods of the Military Academy; to acquire and preserve historical materials relating to that institution; and to encourage and foster the study of military science there by worthy young men."

The Bureau of Internal Revenue has ruled that the Association is tax-exempt and all gifts, contributions, donations, and bequests thereto are likewise exempt from taxation. The Association of Graduates is the only organization through which alumni as a body can contribute their time, effort, and money toward the enhancement of their Alma Mater.

Under the aegis of the Association four annual events have grown to become important traditions. At the Alumni Parade in June Week the Long Gray Line, led by the Superintendent, the President of the Association of Graduates, and the Oldest Graduate Present, marches from Cullum Memorial Hall to Thayer Monument. There, in the presence of the Corps and a multitude of visitors, homage is paid to the "Father of the Military Academy" and to the memory of those graduates who died during the preceding year. It has been said that this gathering of alumni represents, by those attending, more United States history than any other group of similar size.

Homecoming Day is celebrated annually in the Fall at one of the home football games. This occasion, which was first established in 1958, has proved quite successful and as it is now the scheduled reunion period for the more junior classes, it affords the alumni a second annual opportunity to visit their Alma Mater and renew old acquaintances. In addition to the football game, there are a Thayer monument ceremony and a review in honor of the alumni by the Corps of Cadets.

Founders Day, 16 March, is celebrated at West Point and at nearly 150 other places throughout the world. These celebrations

traditionally include a dinner, attended by all alumni within commuting distance, and speeches by the oldest and youngest graduates present. The Association of Graduates supports these annual celebrations in many ways.

Each year since 1958 the Association of Graduates has presented the Sylvanus Thayer Award, a gold medal, to the United States citizen whose record of service to his country exemplifies devotion to the principles expressed in the motto of West Point—"Duty, Honor, Country." Recipients of the award have been Dr. E. O. Lawrence in 1958, John Foster Dulles in 1959, Henry Cabot Lodge in 1960, Dwight D. Eisenhower in 1961, Douglas MacArthur in 1962, John J. McCloy in 1963, Robert A. Lovett in 1964, Dr. James B. Conant in 1965, Carl Vinson in 1966, and Francis Cardinal Spellman in 1967.

The major programs of the Association include maintenance of biographical files on all graduates; publication of necrologies and class reports in *Assembly*; receipt and disposition of historical items; assistance in establishment and support of West Point Societies; maintenance of an up-to-date list of addresses; correspondence concerning graduates; presentation of awards to cadets; selection of the person to receive the Sylvanus Thayer Award; and organization of alumni activities at West Point.

Information is disseminated through two publications published by the West Point Alumni Foundation, Inc., a nonprofit corporation. The annual *Register of Graduates and Former Cadets* includes a summary of each graduate and where he is and what he is doing. The quarterly magazine *Assembly* under the editorial sponsorship of the Association of Graduates gives current information about the Academy and its graduates.

The Association's administrative organization consists of a President and five Vice Presidents, elected annually; a Secretary-Treasurer; and 36 Trustees, 12 of whom are elected annually for terms of 3 years. The Association's office is located in Cullum Memorial Hall.

Cooperating with the Association are the following autonomous West Point Societies:

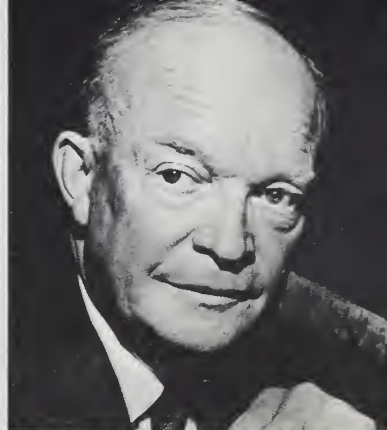
<i>State</i>	<i>West Point Society of—</i>
<i>Alabama</i>	ALABAMA (Birmingham) FORT McCLELLAN MOBILE TENNESSEE VALLEY (Huntsville)
<i>Arizona</i>	PHOENIX SOUTHERN ARIZONA (Tucson)
<i>California</i>	LOS ANGELES MONTEREY PENINSULA (Monterey) SAN DIEGO SAN FRANCISCO BAY AREA



John Foster Dulles, 1959



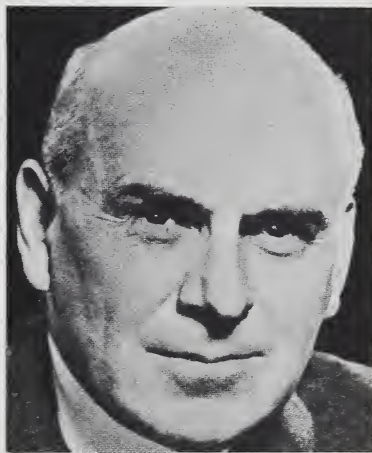
Henry Cabot Lodge, 1960



Dwight David Eisenhower, 1961



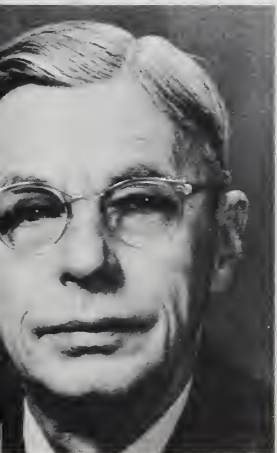
Douglas MacArthur, 1962



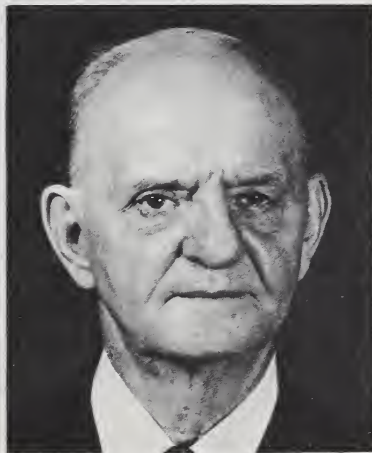
John J. McCloy, 1963



Robert A. Lovett, 1964



James B. Conant, 1965



Carl Vinson, 1966



Francis Cardinal Spellman, 1967

Recipients of Thayer Award

State
Colorado
Connecticut
District of Columbia
Florida

Georgia

Hawaii
Illinois

Indiana
Kentucky
Louisiana
Maryland
Massachusetts
Michigan
Minnesota
Missouri

New Jersey
New Mexico
New York

North Carolina
North Dakota
Ohio

Oklahoma

Oregon
Pennsylvania

Philippine Islands
South Carolina
Tennessee
Texas

West Point Society of—

DENVER
 PIKES PEAK REGION (Colorado Springs)
 CONNECTICUT (Hartford)
 DISTRICT OF COLUMBIA
 CANAVERAL
 CENTRAL FLORIDA (Orlando)
 FLORIDA WEST COAST (Tampa)
 NORTH FLORIDA (Jacksonville)
 SOUTH FLORIDA (Miami)
 ATLANTA
 SAVANNAH
 COLUMBUS (Fort Benning)
 HAWAII (Honolulu)
 CENTRAL ILLINOIS (Champaign-Urbana)
 CHICAGO
 INDIANAPOLIS
 LOUISVILLE
 MID-GULF (New Orleans)
 MARYLAND (Baltimore)
 NEW ENGLAND (Boston)
 MICHIGAN (Detroit)
 MINNESOTA (Minneapolis)
 KANSAS CITY
 ST. LOUIS
 CENTRAL JERSEY (Fort Monmouth)
 ALBUQUERQUE
 NEW YORK (New York City)
 MID-HUDSON VALLEY (West Point)
 ROCHESTER
 WESTERN NEW YORK (Buffalo)
 CAPITAL DISTRICT (Albany)
 WESTERN NORTH CAROLINA (Asheville)
 NORTH DAKOTA (Bismarck)
 CENTRAL OHIO (Columbus)
 CINCINNATI
 CLEVELAND
 NORTHWESTERN OHIO (Van Wert)
 DAYTON
 CENTRAL OKLAHOMA (Oklahoma City)
 EASTERN OKLAHOMA (Tulsa)
 PORTLAND
 CENTRAL PENNSYLVANIA (Harrisburg)
 PHILADELPHIA
 WESTERN PENNSYLVANIA (Pittsburgh)
 PHILIPPINES (Manila)
 CHARLESTON
 TENNESSEE (Nashville)
 EL PASO AREA
 HOUSTON
 NORTH TEXAS (Dallas)
 SOUTH TEXAS (San Antonio)

State
Venezuela
Virginia
Washington
Wisconsin

West Point Society of—
VENEZUELA (Caracas)
HAMPTON ROADS (Hampton)
PUGET SOUND (Seattle)
MILWAUKEE



Statue of Sylvanus Thayer at its new location at Trophy Point

THE WEST POINT ALUMNI FOUNDATION

The West Point Alumni Foundation, Inc., is a nonprofit, tax-exempt educational institution support organization whose objectives are designed to contribute to the welfare and enrichment of the United States Military Academy and the Corps of Cadets. The Foundation was chartered in the State of Maryland in 1945 and maintains an office at West Point. Its operations are directed by a Board of Managers composed of distinguished alumni.

The Foundation is presently engaged in two principal areas of endeavor in furtherance of its purposes. One of these is the financing and distribution of alumni publications in concert with the Association of Graduates USMA. The other is the maintenance and employment of the West Point Superintendent's Fund.

The alumni publications are *Assembly* and the *Register of Graduates and Former Cadets USMA*. *Assembly* is a quarterly magazine containing articles of current interest on developments and events at the Academy, class notes, and memorial articles about deceased graduates. It is edited by the Association of Graduates and contains no advertising. The *Register of Graduates* is an annual publication which lists graduates of the Military Academy by class and order of graduation, and provides a brief resume of their respective careers as well as pertinent data on current addresses or assignments and other matters of interest relating to individual alumni and their association with the Academy. This book is edited by the Foundation and contains a limited amount of advertising. The costs of both publications are met mainly by subscriptions and advertising revenues collected by the Foundation, and by private donations for such purposes to the West Point Superintendent's Fund of the Foundation.

The West Point Superintendent's Fund was established by the Foundation in 1961 for the purpose of receiving and employing private gifts, grants and bequests to provide benefits for the Corps and the Academy that are outside the realm of expected government support. The expenditure of monies for project and program support is controlled by a Policy Committee of distinguished graduates acting on recommendations of the Superintendent. The controls exercised in management of the Fund assure its use for the purpose intended. It is neither an endowment nor an entertainment fund. Nor does the support it provides supplant or conflict with government support of the United States Military Academy.

In the six years of its existence, the Fund has provided a number of worthwhile benefits ranging from minor items of equipment and cadet program support to major facilities and academic activities. The support

given this endeavor by the cadets, alumni and friends of West Point alike has assured its continuance as a means of providing those facilities which lie beyond the limits of expected government support and which are considered highly desirable enhancements of Cadet life.

All gifts to the Foundation and to its West Point Superintendent's Fund are tax deductible in accordance with the provisions of Section 170(C) of the Internal Revenue Code.

Additional information on the Foundation and its activities may be obtained by writing the Secretary-Treasurer, West Point Alumni Foundation, Inc., West Point, NY 10996.



SUPERINTENDENTS OF THE MILITARY ACADEMY

1. JONATHAN WILLIAMS
Maj. Corps of Engineers----- 15 Apr 1802—20 June 1803
2. JONATHAN WILLIAMS
Lt. Col. Corps of Engineers ¹----- 19 Apr 1805—31 July 1812
3. JOSEPH G. SWIFT
Col. Corps of Engineers----- 31 July 1812—24 Mar 1814
4. ALDEN PARTRIDGE
Capt. Corps of Engineers----- 3 Jan 1815—28 July 1817
5. SYLVANUS THAYER
Capt. Corps of Engineers----- 28 July 1817—1 July 1833
6. RENE E. DE RUSSY
Maj. Corps of Engineers----- 1 July 1833—1 Sept 1838
7. RICHARD DELAFIELD
Maj. Corps of Engineers----- 1 Sept 1838—15 Aug 1845
8. HENRY BREWERTON
Capt. Corps of Engineers----- 15 Aug 1845—1 Sept 1852
9. ROBERT E. LEE
Capt. Corps of Engineers----- 1 Sept 1852—31 Mar 1855
10. JOHN G. BARNARD
Capt. Corps of Engineers----- 31 Mar 1855—8 Sept 1856
11. RICHARD DELAFIELD
Maj. Corps of Engineers----- 8 Sept 1856—23 Jan 1861
12. PIERRE G. T. BEAUREGARD
Capt. Corps of Engineers ²----- 23 Jan 1861—28 Jan 1861
13. RICHARD DELAFIELD
Maj. Corps of Engineers ²----- 28 Jan 1861—1 Mar 1861
14. ALEXANDER H. BOWMAN
Maj. Corps of Engineers----- 1 Mar 1861—8 July 1864
15. ZEALOUS B. TOWER
Maj. Corps of Engineers----- 8 July 1864—8 Sept 1864
16. GEORGE W. CULLUM
Lt. Col. Corps of Engineers----- 8 Sept 1864—28 Aug 1866
17. THOMAS G. PITCHER
Col. Infantry ³----- 28 Aug 1866—1 Sept 1871
18. THOMAS H. RUGER
Col. Infantry----- 1 Sept 1871—1 Sept 1876
19. JOHN M. SCHOFIELD
Maj. Gen. U.S. Army----- 1 Sept 1876—21 Jan 1881

¹ Major Williams resigned 20 June 1803, on a point of command, and pending its settlement on 19 April 1805, when he again returned to service as Chief Engineer, no permanent Superintendent was appointed, the command devolving upon the senior officer of the Corps of Engineers present for duty.

² Captain Beauregard, by order of John B. Floyd, Secretary of War, relieved Major Delafield from the Superintendency, but was himself displaced five days later by direction of the succeeding Secretary of War Joseph Holt, the command again devolving upon Major Delafield.

³ The Superintendents were selected from the Corps of Engineers until passage of the law of 13 July 1866, which opened the Superintendency to the entire Army. By the Act of 12 June 1856, the local rank of Colonel was conferred upon the Superintendent.

20. **OLIVER O. HOWARD**
Brig. Gen. U.S. Army----- 21 Jan 1881—1 Sept 1882
21. **WESLEY MERRITT**
Col. Cavalry----- 1 Sept 1882—1 July 1887
22. **JOHN G. PARKE**
Col. Corps of Engineers----- 28 Aug 1887—24 June 1889
23. **JOHN M. WILSON**
Lt. Col. Corps of Engineers----- 26 Aug 1889—31 Mar 1893
24. **OSWALD H. ERNST**
Maj. Corps of Engineers----- 31 Mar 1893—21 Aug 1898
25. **ALBERT L. MILLS**
1st Lt. Cavalry----- 22 Aug 1898—31 Aug 1906
26. **HUGH L. SCOTT**
Maj. Cavalry----- 31 Aug 1906—31 Aug 1910
27. **THOMAS H. BARRY**
Maj. Gen. U.S. Army----- 31 Aug 1910—31 Aug 1912
28. **CLARENCE P. TOWNSLEY**
Col. Coast Artillery Corps----- 31 Aug 1912—30 June 1916
29. **JOHN BIDDLE**
Col. Corps of Engineers----- 1 July 1916—31 May 1917
30. **SAMUEL E. TILLMAN**
Col. U.S. Army----- 13 June 1917—11 June 1919
31. **DOUGLAS MACARTHUR**
Brig. Gen. U.S. Army----- 11 June 1919—30 June 1922
32. **FRED W. SLADEN**
Brig. Gen. U.S. Army----- 1 July 1922—23 Mar 1926
33. **MERCH B. STEWART**
Brig. Gen. U.S. Army----- 24 Mar 1926—5 Oct 1927
34. **EDWIN B. WINANS**
Maj. Gen. U.S. Army----- 23 Oct 1927—25 Feb 1928
35. **WILLIAM R. SMITH**
Maj. Gen. U.S. Army----- 26 Feb 1928—30 Apr 1932
36. **WILLIAM D. CONNOR**
Maj. Gen. U.S. Army----- 1 May 1932—17 Jan 1938
37. **JAY L. BENEDICT**
Brig. Gen. U.S. Army----- 5 Feb 1938—17 Nov 1940
38. **ROBERT L. EICHELBERGER**
Brig. Gen. U.S. Army----- 18 Nov 1940—12 Jan 1942
39. **FRANCIS B. WILBY**
Maj. Gen. U.S. Army----- 13 Jan 1942—4 Sept 1945
40. **MAXWELL D. TAYLOR**
Maj. Gen. U.S. Army----- 5 Sept 1945—28 Jan 1949
41. **BRYANT E. MOORE**
Maj. Gen. U.S. Army----- 28 Jan 1949—17 Jan 1951
42. **FREDERICK A. IRVING**
Maj. Gen. U.S. Army----- 1 Feb 1951—31 Aug 1954

43. **BLACKSHEAR M. BRYAN**
Lt. Gen. U.S. Army----- 3 Sept 1954—14 July 1956
44. **GARRISON H. DAVIDSON**
Lt. Gen. U.S. Army----- 15 July 1956—30 June 1960
45. **WILLIAM C. WESTMORELAND**
Maj. Gen. U.S. Army----- 1 July 1960—28 June 1963
46. **JAMES B. LAMPERT**
Maj. Gen. U.S. Army----- 29 June 1963—6 Jan 1966
47. **DONALD V. BENNETT**
Maj. Gen. U.S. Army----- 10 Jan 1966—



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MAJ. James L. Abrahamson, ARMOR
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 B.S., U.S. Military Academy
 M.A., Institut Universitaire de hautes
 etudes internationales, Geneva,
 Switzerland

LTC. Robert L. Ackerson, CE
*Assistant Professor of History of the
 Military Art*
 B.S., U.S. Military Academy
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MR. James F. Adams
Lacrosse Coach
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LTC. David C. Ahearn, ARTY
Associate Professor of English
 B.S., U.S. Military Academy
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MR. Leroy A. Alitz
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 B.S., State College of Iowa
 M.A., University of Iowa

MAJ. Lee Allen, ARMOR
Instructor in Geography
 B.S., U.S. Military Academy
 M.S., University of Illinois

MAJ. Robert H. Allison, ARTY
Assistant Professor of Mathematics
 A.B., University of Massachusetts
 M.S., Mississippi State University

MAJ. Salvador Alvarez, Mexican Army
Instructor in Spanish
 B.S., Heroico Colegio Militar

MAJ. James L. Anderson, INF
Instructor in Physical Education
 B.S., U.S. Military Academy
 M.S., Indiana University

LTC. Nick J. Andre, CE
Instructor in Civil Engineering
 B.S., Virginia Polytechnic Institute
 B.S.C.E., University of Missouri

LTC. Robert B. Andreen, SIGC
Associate Professor of Electricity
 B.S., U.S. Military Academy
 M.S.E.E., Ph. D., Georgia Institute of
 Technology

MAJ. Jack A. Apperson, ORD C
Instructor in Ordnance Engineering
 B.S., U.S. Military Academy
 M.S., Purdue University

DR. Lloyd O. Appleton
Associate Director of Physical Education
 B.A., Cornell University
 M.A., Columbia University
 Ph. D., New York University

MAJ. Billy A. Arthur, INF
Instructor in English
 B.S., U.S. Military Academy
 M.A., Columbia University

MAJ. George A. Bailey, AGC
Associate Professor of English
 B.A., University of Connecticut
 M.A., The Ohio State University

MAJ. Ronald C. Baldwin, ARTY
Instructor in Chemistry
 B.S., U.S. Military Academy
 M.S., Rensselaer Polytechnic Institute

MAJ. Walter S. Barge, AIS
Assistant Professor of Social Sciences
 B.A., Wake Forest University
 M.A., Columbia University

MAJ. James F. Baur, CE
Assistant Professor of Physics
 B.S., M.S., University of Florida

MAJ. Dwight E. Beach, Jr., ARTY
Assistant Professor of Mechanics
 B.S., U.S. Military Academy
 M.S., Massachusetts Institute of Tech-
 nology

MAJ. Benjamin B. Beasley, ARMOR
Instructor in English
 B.S., U.S. Military Academy
 M.A., University of Pennsylvania

MISS Martha N. Beck
Reference Librarian, USMA Library
B.A., Queens College, New York
M.L.S., Columbia University

MAJ. Raymond E. Bell, Jr., ARMOR
Assistant Professor, German
B.S., U.S. Military Academy
M.A., Middlebury College

MAJ. GEN. Donald V. Bennett, USA
Superintendent
B.S., U.S. Military Academy
Army War College

MAJ. Lester E. Bennett, INF
Tactical Officer, USCC
B.S., U.S. Military Academy

MAJ. Richard C. Bennett, CE
Instructor in Mechanics
B.S., U.S. Military Academy
M.S., University of Illinois

MAJ. Thomas R. Bennett, CE
Assistant Professor of Mathematics
B.S., U.S. Military Academy
M.S., University of Illinois

MAJ. John R. Berti, SIG C
Instructor in Electricity
B.S., U.S. Military Academy
M.S.E.E., University of Michigan

LTC. Theodore C. Bielicki, CML C
Assistant Professor of Mathematics
B.S., U.S. Military Academy
M.S., U.S. Naval Postgraduate School
Armed Forces Staff College

LTC. Alan C. Biggerstaff, SIG C
Associate Professor in Engineering Fundamentals
B.S., U.S. Military Academy
M.S., University of Arizona

COL. John D. Billingsley, Professor
Head of Department of Ordnance
B.S., U.S. Military Academy
B.S. in M.E., Massachusetts Institute of Technology
M.B.A., Harvard University
National War College

MAJ. Joseph A. Bishop, CE
Assistant Professor of Physics
B.S., U.S. Military Academy
M.S., University of California (Davis)

MAJ. Daryl K. Blackman, SIG C
Assistant Professor of Electricity
B.S.E.E., Utah State Agricultural College
M.S.E.E., Stanford University

LTC. Arthur H. Blair, CE
Associate Professor, Director, Research and Analysis Division, Office of the Dean
B.S., U.S. Military Academy
M.S., California Institute of Technology
M.A., University of Pennsylvania

MAJ. Roger R. Blunt, CE
Tactical Officer, USCC
B.S., U.S. Military Academy
M.S., Massachusetts Institute of Technology

MAJ. Jack E. Bohman, ARTY
Instructor in French
B.S., U.S. Military Academy
M.A., Middlebury College

MAJ. Arcade G. Boivin, CE
Instructor in Engineering Fundamentals
B.S., U.S. Military Academy
M.S.E., Purdue University

MAJ. Paul M. Bons, ARTY
Instructor in Military Psychology and Leadership
B.S., U.S. Military Academy
M.A., Wayne State University

CPT. George W. Bowers, QMC
Instructor in Mathematics
B.S., Indiana State College

CPT. Quinton P. Boyd, ORD C
Instructor in Mathematics
B.S., Davidson College
M.S., Purdue University

1 LT. David C. Boysen, JAGG
Instructor in Law
B.S., Syracuse University
LL.B., Syracuse University

- MAJ. Jack O. Bradshaw, AT**
Assistant Professor of Social Sciences
 B.S., U.S. Military Academy
 Diploma, Heidelberg, Germany
- MAJ. Edward J. Brady, SIG C**
Instructor in Physics
 B.S., U.S. Military Academy
 M.S., Pennsylvania State University
- MAJ. Ronald V. Brass, CE**
Instructor in Civil Engineering
 B.S., U.S. Military Academy
 M.S.C.E., University of Illinois
- MR. Claude F. Bridges**
*Chief, Institutional Research Division,
 Office of Research*
 B.S., M.A., University of Florida
- MAJ. H. Lee Briggs, Jr., ARTY**
Assistant Professor of Physics
 B.S., U.S. Military Academy
 M.S., Purdue University
- COL. Charles R. Broshous, Professor**
*Head of Department of Earth, Space,
 and Graphic Sciences*
 B.S., U.S. Military Academy
 M.S., University of California
- MAJ. Joseph E. Brown, INF**
Instructor in Mathematics
 B.S., Georgia Institute of Technology
 M.S., Iowa State University
- CPT. Reginald J. Brown, IN**
Instructor of Social Sciences
 B.S., U.S. Military Academy
 M.P.A., Harvard University
- MAJ. William I. Brownfield, CE**
Assistant Professor of Electricity
 B.S., The Citadel
 M.S.E.E., Purdue University
- CPT. Roy C. Buckner, CE**
Instructor in Mathematics
 B.S., U.S. Military Academy
- MAJ. William C. Buell, ARTY**
Assistant Professor, Spanish
 B.S., U.S. Military Academy
 M.A. Middlebury College
- MAJ. Al Buie, USAF**
Air Force Liaison Officer, USMA
 B.S., U.S. Military Academy
- MAJ. Jerry J. Burcham, INF**
Instructor in Physical Education
 B.S., U.S. Military Academy
 M.S., Indiana University
- MAJ. Willard M. Burleson, Jr., AR**
Instructor of Social Sciences
 B.S., U.S. Military Academy
 M.A., University of Pennsylvania
- MAJ. James C. Burris, INF**
*Assistant Director, Military Psychology
 and Leadership*
 B.S., U.S. Military Academy
 M.A., Louisiana State University
- MAJ. Harlan B. Bynell, ARTY**
Assistant Professor of English
 B.S., U.S. Military Academy
 M.A., Columbia University
- MR. Thomas B. Cahill**
Head Football Coach
 B.S., Niagara University
- MAJ. Francis J. Calverase, ARTY**
Instructor in English
 B.S., U.S. Military Academy
- MAJ. Jack F. Calvert, CML C**
Assistant Professor of Chemistry
 B.S., New Mexico Military Institute
 M.S., Oklahoma State University
- LTC. David H. Cameron, CE**
Associate Professor of Mathematics
 B.S., U.S. Military Academy
 M.S.E., M.A., Princeton University
 M.S., Rensselaer Polytechnic Institute
- MR. Edward I. Campbell**
Audio-Visual Librarian, USMA Library
 BA., (SUNY) New Paltz
 M.L.S., Pratt Institute
- MAJ. J. Frank Campbell, INF**
Instructor in Electricity
 B.S., U.S. Military Academy
 M.S.E.E., North Carolina State University
- SP4 Dwaine L. Canova**
*Instructor of Computer Programming,
 Office of the Dean*
 B.S., Fresno State College

COL. Jerry G. Capka, CE

Director of Athletics

B.S., U.S. Military Academy
M.S., Harvard University
M.A., George Washington University

LTC. Jack L. Capps, Professor

Deputy Head of Department of English

B.S., U.S. Military Academy
M.A., Ph.D., University of Pennsylvania

LTC. Robert E. Carignan, FC

Associate Professor of Social Sciences

B.S., University of Maryland
M.B.A., Harvard University

MAJ. Clayton H. Carmean, Jr., CE

Assistant Professor of Physics

B.S., U.S. Military Academy
M.S., Pennsylvania State University

MAJ. Thomas E. Carpenter, III, AR

Assistant Professor of Social Sciences

B.S., U.S. Military Academy
M.A., M.A.L.D., The Fletcher School
of Law and Diplomacy

MAJ. Benny M. Carr, CE

Instructor in Electricity

B.S., U.S. Military Academy
M.S.E.E., Purdue University

1 LT. Orwin L. Carter, CML C

Instructor in Chemistry

B.S., University of Iowa
M.S., Ph. D., University of Illinois

MR. Philip M. Cavanaugh

Museum Technician, USMA Museum

MAJ. Jerry W. Cavender, ORD C

Instructor in Management Engineering

B.S., Middle Tennessee State College
M.A., University of Alabama

MAJ. William F. Chamberlain, CE

Instructor in Mathematics

B.S., U.S. Military Academy
M.S.E., Princeton University

MAJ. George W. Chancellor, ARTY

Associate Professor of Chemistry

B.S., U.S. Military Academy
M.S., Purdue University

MR. Jason Chang

Instructor in Chinese

B.A., National South West Associated
University (Kunming, China)
M.A., New York University

MAJ. Robert T. Chenoweth, TC

Assistant Professor of Social Sciences

B.S., Purdue University
M.B.A., Harvard University

MAJ. Gerald G. Chikalla, INF

Senior Infantry Instructor, Office of Military Instruction

B.S., U.S. Military Academy

MAJ. Wendell A. Childs, ORD C

Assistant Professor of Physics

B.S., Auburn University
M.S., Stevens Institute of Technology

LTC. Max A. Clapp, INF

Instructor in Physical Education

B.S., Purdue University

CPT. Claude L. Clark, AR

Instructor of Social Sciences

B.S., U.S. Military Academy
M.A., Stanford University

CPT. Winston B. Clark, ARTY

Tactical Officer, USCC

B.S., U.S. Military Academy

CPT. Richard D. Clarke, INF

Instructor in Physical Education

B.S., U.S. Military Academy

MAJ. William P. Clary, ARMOR

Instructor in German

B.S., U.S. Military Academy
M.A., Middlebury College

MAJ. Donald E. Cluxton, Jr., INF

Instructor in History of the Military Art

A.B., University of Wyoming
M.A., Duke University

LTC. Thomas W. Collier, INF

Instructor in History of the Military Art

B.S., U.S. Military Academy
M.A., Duke University
M.S., George Washington University

MAJ. Michael J. Collins, USAF

Assistant Professor of Social Sciences

B.A., M.A., Butler University
M.A., Rutgers University

- MAJ. John M. Collison, ARTY**
Assistant Operations Officer, USCC
 B.A., Texas A&M University
- MAJ. Willard C. Conley, INF**
Instructor in Mathematics
 B.S., U.S. Military Academy
- MAJ. Robert E. Conroy, CE**
Assistant Plans Officer, Office of Military Instruction
 B.S.C.E., University of Massachusetts
 M.S.C.E., Stanford University
- MAJ. John J. Cook, Jr., ARTY**
Assistant S1, USCC
 B.A., Pennsylvania Military College
- MAJ. Jack B. Cooper, ARMOR**
Instructor in Engineering Fundamentals
 B.S., U.S. Military Academy
 M.S., Northeastern University
- MAJ. William T. Cooper, CE**
Assistant Professor of Physics
 B.S., U.S. Military Academy
 M.S., North Carolina State College
- MAJ. John F. Corby, CE**
Instructor in Civil Engineering
 B.S., U.S. Military Academy
 M.S., University of Illinois
- MAJ. Joseph H. Coreth, ARMOR**
Instructor in English
 B.S., U.S. Military Academy
 M.A., Cornell University
- MAJ. James J. Cortez, ARMOR**
Instructor in Military Psychology and Leadership
 B.S., U.S. Military Academy
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- CPT. Holland B. Coulter, ARTY**
Instructor in Mathematics
 B.S., U.S. Military Academy
 M.S., Rensselaer Polytechnic Institute
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- MAJ. William F. Crews, ORD C**
Instructor in Ordnance Engineering
 B.S., U.S. Military Academy
 M.S., Purdue University
- MR. Carleton Crowell**
Cross Country and Track and Field Coach
 Ph. B., University of Wisconsin
- LTC. Edward F. Crowley, INF**
Executive Officer, Department of Foreign Languages; Assistant Professor
 B.S., U.S. Military Academy
 University of Madrid, Spain
- CPT. Edward M. Crowley, INF**
Admissions Officer
 B.S., U.S. Military Academy
- MR. William C. B. Cullen**
Associate Instructor in Physical Education for Tennis and Squash, and Tennis and Squash Coach
 B.A., Wake Forest College
- COL. Elliott C. Cutler, Jr., Professor**
Head of Department of Electricity
 B.S., U.S. Military Academy
 M.S.E.E., Ph. D., Georgia Institute of Technology
- MRS. Darla Daggit**
Cataloger, USMA Library
 B.A., University of Maryland
 M.S., Columbia University
- LTC. Edward A. Daggit, INF**
Assistant Professor of Mathematics
 B.S., U.S. Military Academy
 M.S., Rensselaer Polytechnic Institute
- LTC. John D. Daigh, CE**
Associate Professor of Mechanics
 B.S., U.S. Military Academy
 M.S., Ph. D., University of Illinois
- CPT. Harold W. Darden, Jr., INF**
Tactical Officer, USCC
 B.S., North Georgia College
- MAJ. Donald R. Davis, ARTY**
Instructor, Office of Military Instruction
 B.S., U.S. Military Academy
- MAJ. James M. Davis, Jr., INF**
Assistant Professor of Engineering Fundamentals
 B.S., U.S. Military Academy
 M.S., Georgia Institute of Technology
- MR. John A. Davis, Jr.**
Organist and Choirmaster
 B.S., Westminster Choir College
 M.A., Boston University

MAJ. Peter M. Dawkins, INF

Assistant Professor of Social Sciences
B.S., U.S. Military Academy
B.A., M.A. (Oxon)

MAJ. William S. deCamp, AR

Assistant Professor of Social Sciences
A.A., A.B., University of California
M.A., Tulane University

MAJ. John G. deCordova, British Army
Instructor, Office of Military Instruction
RMA Sandhurst Staff College

MR. Don DeVoe

Assistant Basketball Coach
B.S., Ohio State University

MAJ. Robert E. Deardorff, Jr.

Assistant Director for Resource Management
B.S., U.S. Military Academy

MAJ. Robert Degen, ARMOR

Instructor in Physical Education
B.S., U.S. Military Academy
M.S., University of Wisconsin

MAJ. Stanley J. Delikat, ARTY

Instructor in English
B.S., U.S. Military Academy
M.A., University of Pennsylvania

MAJ. Gerald Z. Demers, ORD C

Assistant Professor of Engineering Fundamentals
B.S., U.S. Military Academy
M.S., University of Alabama

LTC. Edgar Denton, III, AG

Associate Professor of Social Sciences
B.A., M.A., Ph. D., Syracuse University

COL. John S. B. Dick, Professor

Head of Department of Mathematics
B.S., U.S. Military Academy
M.S., Massachusetts Institute of Technology
M.S., Rensselaer Polytechnic Institute
NATO Defense College

LTC. Robert C. Diehl, ARMOR

Deputy Director, Office of Military Instruction
B.S., University of Maryland

CPT. Philip G. Dombrowski, ARTY

Instructor in Mathematics
B.S., U.S. Military Academy
M.S., Rensselaer Polytechnic Institute

LTC. James C. Donovan, CE

Operations Officer, USCC
B.S., U.S. Military Academy
M.S., Iowa State College

CPT. Arthur J. Downey, Jr., SIG C

Instructor in Electricity
B.S., U.S. Military Academy
M.S.E.E., Stanford University

MAJ. Edward J. Downing, Jr., ARTY

Assistant Professor of Chemistry
B.S., U.S. Military Academy
M.S., Pennsylvania State University

MAJ. George N. Dreybus, Jr., ARTY

Tactical Officer, USCC
B.A., The Citadel

MAJ. Paul C. Driscoll, CE

Instructor in Civil Engineering
B.S., U.S. Military Academy
M.S.C.E., M.S.N.E., University of Illinois

CPT. George R. Duncan, CML C

Instructor in Mathematics
B.S., U.S. Military Academy

MAJ. William F. Dunkelberger, ARTY

Assistant Professor, Russian
B.A., Virginia Military Institute
M.A., Columbia University

MAJ. James W. Dunn, ARTY

Instructor in History of the Military Art
B.S., U.S. Military Academy

LTC. Donald T. Dunne, ARMOR

Assistant Director of Instruction and Associate Professor, Department of Foreign Languages
B.A., University of Virginia
M.A., Middlebury College

MISS Martha M. Earl

Reference Librarian, USMA Library
B.A., University of California
B.L.S., School of Librarianship, University of California

- LTC. Clyde T. Earnest, Jr., CE**
Assistant Professor of Civil Engineering
 B.S., U.S. Military Academy
 M.S.C.E., Texas A&M
- REVEREND Michael B. Easterling**
Assistant Chaplain, USMA
 B.A., Wheaton College
 B.D., Gordon Divinity School
- LTC. Kenneth R. Ebner, INF**
Assistant Professor of Geography
 B.S., U.S. Military Academy
 M.A., Columbia University
- MAJ. James S. V. Edgar, INF**
Instructor of Social Sciences
 B.S., U.S. Military Academy
 M.A., Princeton University
- CPT. Francis C. Egan, INF**
Admissions Officer
 B.S., U.S. Military Academy
- CPT. Michael A. Eggleston, SIG C**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- LTC. Raymond J. Eineigl, CE**
Assistant Professor of Civil Engineering
 B.S., U.S. Military Academy
 M.S., Northeastern University
- LTC. Warren H. Eisenhart, ARTY**
Assistant Professor, Military Psychology and Leadership
 B.S., U.S. Military Academy
 M.S., Purdue University
- MAJ. Phillips G. P. Eliot, ARTY**
Assistant Professor of Mathematics
 B.S., U.S. Military Academy
 M.S., Rennselaer Polytechnic Institute
- CPT. John C. Ellerson, INF**
Aide-de-camp, to the Superintendent
 B.S., U.S. Military Academy
- MAJ. Sumner R. Ely, ORD C**
Instructor in Ordnance Engineering
 B.S., University of California
 M.S., Stevens Institute of Technology
- CPT. Charles A. Endress, MI**
Instructor of Social Sciences
 B.A., Vanderbilt University
 M.A., Tulane University
- MAJ. Clarence E. Endy, Jr., SIG C**
Instructor in Electricity
 B.S., U.S. Military Academy
 M.S.E.E., Purdue University
- LTC. Arthur L. Erickson, INF**
Assistant Professor of Astronomy
 B.S., U.S. Military Academy
 M.S., Johns Hopkins University
- MAJ. Darrold J. Erickson, SIG C**
Instructor in Military Psychology and Leadership
 B.S., U.S. Military Academy
 M.B.A., Harvard University
- CPT. Leonard F. Ermold, Jr., CE**
Assistant Professor of Mechanics
 B.S., Drexel Institute of Technology
 M.S., Ph. D., Virginia Polytechnic Institute
- MAJ. Ronald L. Ernharth, AT**
Instructor of Social Sciences
 B.S., U.S. Military Academy
 M.A., Columbia University
- CPT. Kenneth J. Fedor, AT**
Instructor of Social Sciences
 B.A., Ripon College
 Ph. D., University of Tennessee
- MISS Irene Feith**
Reference Librarian, USMA Library
 B.A., Ladycliff College
- MAJ. James C. Ferguson, Jr., ARTY**
Assistant Professor of Physics
 B.S., U.S. Military Academy
 M.S., Pennsylvania State University
- CPT. Harold T. Fields, Jr., INF**
Tactical Officer, USCC
 B.S., The Citadel
- MR. Robert W. Fisch**
Museum Specialist, USMA Museum
- 1LT. Stephen B. Fischer, CE**
Systems Analysis Officer, Office of the Dean
 B.S., Drexel Institute of Technology
 M.S., University of Pennsylvania
- CPT. Francis J. Fishburne, ARTY**
Admissions Officer
 B.S., U.S. Military Academy
 M.A., The Ohio State University

- LTC. Emil Fisher, Jr., ARMOR**
Assistant Information Officer
 B.A., Virginia Military Institute
 M.A., University of Wisconsin
- CPT. John W. Fisher, ARMOR**
Assistant Professor, German
 B.A., Stanford University
 M.A., Columbia University
- MAJ. William A. Fitzgerald, Jr., ARMOR**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- SP4 Herbert S. Fitzgibbon**
Instructor in Physical Education
 A.B., Princeton University
- 1LT. Preston W. Forbes, ARTY**
Instructor in Physics
 B.S., University of Richmond
 M.S., University of Toledo
 Ph. D., Virginia Polytechnic Institute
- REVEREND James D. Ford**
Chaplain, USMA
 B.A., Gustavus Adolphus College
 B.D., Augustana Theological Seminary
- CPT. Albert E. Fowerbaugh, AR**
Assistant Professor of Social Sciences
 B.A., J.D., University of Michigan
- MAJ. Darrell V. Fowler, CML C**
Instructor in Physics
 B.S., Massachusetts Institute of Technology
 M.S., University of Michigan
- LTC. John E. Fox, INF**
Associate Professor of Environment
 B.S., U.S. Military Academy
 M.A., Columbia University
- MAJ. Joseph P. Franklin, CE**
Assistant Professor of Civil Engineering
 B.S., U.S. Military Academy
 M.S.C.E., M.S.N.E., Massachusetts Institute of Technology
- MAJ. Frederick M. Franks, Jr., ARMOR**
Instructor in English
 B.S., U.S. Military Academy
 M.A., Columbia University
- COL. DeBow Freed, INF**
Associate Professor of Physics
 B.S., U.S. Military Academy
 M.S., University of Kansas
 Ph. D., University of New Mexico
 Air War College
- LTC. Edward P. Freedman, ARMOR**
Assistant Professor, German
 B.S., U.S. Military Academy
 M.A., Middlebury College
- CPT. Robert O. Freedman, INF**
Instructor of Social Sciences
 B.A., University of Pennsylvania
 M.A., Columbia University
 Certificate of the Russian Institute,
 Columbia University
- LT. Henry A. Friedman, ARMOR**
Instructor in Physical Education
 B.A., M.A., University of California
 (Santa Barbara)
- CPT. Norbert W. Frische, USAF**
Instructor of Social Sciences
 B.A., College of St. Thomas
 M.B.A., Harvard University
- MAJ. Ross A. Gagliano, SIG C**
Instructor in Mathematics
 B.S., U.S. Military Academy
 M.S., U.S. Naval Postgraduate School
- LTC. George W. Gallant, Jr., MI**
Instructor in Russian
 A.B., Boston College
 M.A., Georgetown University
- MR. Frederick C. H. Garcia**
Assistant Professor, Portuguese
 B.A. and Licenciado, Federal District
 University of Rio de Janeiro, Brazil
 Diploma (Teaching Certificate), University of Coimbra, Portugal
- MAJ. William J. Garcia, Jr., CE**
Assistant Professor of Physics
 B.S., U.S. Military Academy
 M.S., University of Illinois
- MAJ. Thomas P. Garigan, INF**
Instructor in English
 B.S., U.S. Military Academy
 M.A., University of Pennsylvania

- LTC. Donald F. Garvais, ORD C**
Assistant Professor of Mathematics
 B.S., University of Connecticut
 M.B.A., Babson Institute
- LTC. John B. Garver, Jr., INF**
Assistant Professor of Anglo-American Geography
 B.S., U.S. Military Academy
 M.A., Syracuse University
- MAJ. Charles J. Garvey, INF**
Associate Director of Physical Education
 B.S., U.S. Military Academy
 M.S., Indiana University
- CPT. Richard E. Garvey, Jr., ARTY**
Instructor in Mathematics
 B.S., U.S. Military Academy
- MAJ. John L. Geisinger, SIGC**
Instructor in Electricity
 B.S.E.E., M.S.E.E., University of Illinois
- MAJ. Leslie G. Gibbings, INF**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- MAJ. Robert W. Giuliano**
Assistant Professor, Educational Research and Analysis Division, Office of the Dean
 B.S., U.S. Military Academy
 M.A., M.S.E., Ph. D., Princeton University
- MAJ. Charles A. Glenn, ARTY**
S1, Second Regiment
 B.S., U.S. Military Academy
- 1LT. Terrence P. Goggin, MI**
Instructor of Social Sciences
 A.B., Georgetown University
 J.D., University of Southern California
- MAJ. William L. Golden, INF**
Instructor in Military Psychology and Leadership
 B.S., U.S. Military Academy
 M.A., University of Chicago
- MAJ. Walter R. Good, SIGC**
Instructor in English
 B.S., U.S. Military Academy
 M.A., University of Pennsylvania
- MAJ. Fred W. Goodenough, Jr., INF**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- MAJ. Thomas P. Gorman, MI**
Instructor of Social Sciences
 B.A., Fordham University
 M.A., American University
- LTC. Warren R. Gossett, ARMOR**
Deputy Director, Office of Physical Education
 B.S., U.S. Military Academy
 M.A., University of Oklahoma
- LTC. Harl G. Graham, ARTY**
Instructor in Electricity
 B.S., U.S. Military Academy
 M.S.E.E., Arizona State University
- MAJ. Todd P. Graham, INF**
Assistant Professor of Geography of USSR
 B.S., U.S. Military Academy
 M.A., Syracuse University
- MAJ. Vincent G. Grande, Jr., SIG C**
Instructor in Mathematics
 B.S., U.S. Military Academy
- MAJ. Gary P. Graves, ARMOR**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- CPT. Leonard C. Gregor, CE**
Instructor in Mathematics
 B.S., U.S. Military Academy
- COL. Thomas E. Griess, Professor**
Deputy Head of Department of Military Art and Engineering
 B.S., U.S. Military Academy
 M.S., University of Illinois
- MAJ. Fletcher H. Griffiths, Jr., CE**
Assistant Professor of Mathematics
 B.S., U.S. Military Academy
 M.S., Oklahoma State University
- CPT. Bruce J. Gronich, SIGC**
Instructor in Physics
 B.S., U.S. Military Academy
 M.S., Pennsylvania State University
- MAJ. Edward F. Grubbs, Jr., INF**
Assistant Professor of the Portuguese Language
 B.S., U.S. Military Academy

MAJ. William E. Haas, INF
Assistant Professor of English
B.S., U.S. Military Academy
M.A., University of Pennsylvania

CPT. John H. Hafner, AGC
Instructor in English
B.S., Springhill College
M.A., Marquette University

COL. Alexander M. Haig, Jr., ARMOR
Commanding Officer, 3d Regiment, USCC
B.S., U.S. Military Academy
M.A., Georgetown University
U.S. Army War College

MAJ. John P. Haley, INF
Tactical Officer, USCC
B.S., U.S. Military Academy

MAJ. F. Whitney Hall, Jr., AR
Assistant Professor of Social Science
B.S., U.S. Military Academy
M.A., Georgetown University

SFC. Kenneth Hamill
Rifle Coach

MAJ. Leroy D. Hammond, CE
Instructor in Engineering Fundamentals
B.S., Virginia Military Institute
M.S., Stanford University

CPT. James R. Hannigan, SIG C
Sr. Instructor and Systems Officer, Office of the Dean
B.S., U.S. Military Academy
M.S., California Institute of Technology

MISS Ann K. Harlow
Chief, Readers Services Division, USMA Library
A.B., Duke University
B.S., in L.S. University of North Carolina

MAJ. Donald G. Harmon, ARTY
Assistant S4, USCC
B.S., Iowa State University

MAJ. Norman D. Harms, ARMOR
Tactical Officer, USCC
B.S., Portland State College

MAJ. John R. Harrell, ARTY
Instructor in Engineering Fundamentals
B.S., U.S. Military Academy
M.S., University of Southern California

MAJ. Arthur M. Harris, INF
Instructor, Office of Military Instruction
B.S., U.S. Military Academy

MAJ. Wiley V. Harris, Jr., SIG C
Instructor in Engineering Fundamentals
B.S., U.S. Military Academy
M.S., University of Arizona

MAJ. Franklin A. Hart, IN
Assistant Professor of Social Sciences
B.A., U.S. Military Academy
M.A., Stanford University

MAJ. Robert T. Hatcher, ARMOR
Instructor, Office of Military Instruction
B.S., Massachusetts Institute of Technology

MAJ. William L. Hauser, AT
Assistant Professor of Social Sciences
B.S., U.S. Military Academy
M.A., University of Southern California

MAJ. Leroy R. Hayden, Jr., CE
Assistant Professor of Engineering Fundamentals
B.S., U.S. Military Academy
M.S., Purdue University

COL. Samuel H. Hays, INF
Director of the Office of Military Psychology and Leadership
B.S., U.S. Military Academy
M.A., Columbia University
Army War College

MR. Jack Hecker
Assistant Football Coach
B.S., M.S., M. Ed., Bowling Green State University

COL. Elvin R. Heiberg, Professor
Head of the Department of Mechanics
B.S., U.S. Military Academy
C.E., Cornell University
Diploma in Hydraulic Engineering,
Delft Technological University,
Netherlands

- LTC. Elvin R. Heiberg, III, CE**
Associate Professor of Social Sciences
 B.S., U.S. Military Academy
 M.S., Massachusetts Institute of Technology
 M.A., George Washington University
- CPT. Walter C. Hendrix, III, MI**
Instructor of Social Sciences
 A.B., Mercer University
 M.A., Ph. D., Yale University
- MAJ. Kermit M. Henninger, ARTY**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- LTC. Morris J. Herbert, ARTY**
Associate Professor of Ordnance
 B.S., U.S. Military Academy
 M.S., University of Southern California
- MAJ. Dean A. Herman, Jr., ARTY**
Instructor in Electricity
 B.S., U.S. Military Academy
 M.S.E.E., Stanford University
- LTC. Roy J. Herte, Jr., INF**
S4, Office of Physical Education
 B.S., U.S. Military Academy
- LTC. Pennell J. Hickey, INF**
Associate Professor of Military Psychology and Leadership
 B.S., U.S. Military Academy
 M.S., Purdue University
- CPT. Stanford W. Hickman, ARTY**
Instructor in Mechanics
 B.S., U.S. Military Academy
 M.S., University of Arizona
- MAJ. Louis V. Hightower, III, INF**
Instructor in Spanish
 B.S., U.S. Military Academy
 M.A., Middlebury College
- MAJ. Edward E. Hildreth, Jr., ARTY**
Instructor in Mathematics
 B.S., U.S. Military Academy
- MAJ. James L. E. Hill, CML C**
Instructor in Chemistry
 B.S., West Virginia State College
 M.S., Pennsylvania State University
- MAJ. Jerome B. Hilmes, CE**
Assistant Professor of Mechanics
 B.S., U.S. Military Academy
 M.S., Ph. D., Iowa State University
- MAJ. Richard W. Hobbs, IN**
Assistant Professor of Social Science
 B.S., U.S. Military Academy
 Ph. D., University of Lyons
- CPT. Robert L. Hobson, ARTY**
Assistant Professor of Physics
 B.S., Virginia Military Institute
 Ph. D., Rensselaer Polytechnic Institute
- MAJ. John R. Hocker, INF**
Instructor in Mathematics
 B.S., U.S. Military Academy
- LTC. Wilford J. Hoff, Jr., CML C**
Associate Professor and Deputy Head of the Department of Chemistry
 B.S., The Citadel
 M.A., Ph. D., Princeton University
- COL. Hugh F. T. Hoffman, Jr., INF**
Director, Office of Military Instruction
 B.S., U.S. Military Academy
 Army War College
- SP5 Robert W. Holz**
Instructor of Computer Programming, Office of the Dean
 B.A., University of Hawaii
- LTC. John F. Hook, AGC**
Assistant Professor, Spanish
 B.S., U.S. Military Academy
 M.A., Middlebury College
- MAJ. Thomas G. Horst, CE**
Senior Engineer Instructor, Office of Military Instruction
 B.S., U.S. Military Academy
 M.S., University of Michigan
- MR. John W. Houston**
Chief, Administrative Services, Office of Research
 B.S., St. Lawrence University
- LTC. Martin D. Howell, ARMOR**
Commanding Officer, Second Regiment, USCC
 B.S., U.S. Military Academy
 M.A., University of Mississippi
 Ph. D., New York University
- COL. John S. Howland, ARMOR**
Director of Research
 B.S., U.S. Military Academy
 M.A., Ph. D., Vanderbilt University
 British Staff College
 National War College

- MAJ. Dale E. Hruby, AR**
Assistant Professor of Social Sciences
 B.S., U.S. Military Academy
 M.A., Columbia University
- MAJ. Harry J. Hubbard, III, ARTY**
Assistant Professor of Astronomy
 B.S., U.S. Military Academy
 M.S., University of Southern California
- CPT. Thomas P. Hueman, CE**
Instructor in Mechanics
 B.S., U.S. Military Academy
 M.S., Massachusetts Institute of Technology
- MAJ. David A. Hufnagel, ARTY**
Assistant Professor of Space Science
 B.S., U.S. Military Academy
 M.S., Rensselaer Polytechnic Institute
- COL. Algin L. Hughes, ARTY**
Deputy Commandant, USCC
 B.S., U.S. Military Academy
 Armed Forces Staff College
 Army War College
- MAJ. Larry H. Hunt, ARTY**
Assistant Professor of Chemistry
 B.S., U.S. Military Academy
 M.S., Pennsylvania State University
- CPT. Joseph W. Hutchinson, ARTY**
Assistant Plans Officer, Office of Military Instruction
 B.S., U.S. Military Academy
- MAJ. C. Powell Hutton, AR**
Instructor of Social Sciences
 B.S., U.S. Military Academy
 B.A., M.A. (Oxon)
- MAJ. Michael D. Isacco, INF**
Instructor in Physical Education
 B.S., U.S. Military Academy
- CPT. Gustave F. Jacob, JAGC**
Instructor in Law
 B.S., South Dakota State University
 LL.B., South Dakota University School of Law
- MAJ. Orléans A. Jambon, INF**
Assistant Professor, French
 B.S., Louisiana State University
 M.A., Middlebury College
- BG John R. Jannarone, USA**
Dean of the Academic Board
 B.S., U.S. Military Academy
 M.S., California Institute of Technology
 C.E., Columbia University
 Army War College
- MAJ. James R. Jenkins, SIG C**
Assistant Professor of Engineering Fundamentals
 B.S., U.S. Military Academy
 M.S., University of Arizona
- MAJ. Gerald R. Jilbert, ARTY**
Instructor in Chemistry
 B.S., U.S. Military Academy
 M.S., University of Virginia
- MAJ. Carl B. L. Johansson, USAF**
Tactical Officer, USCC
 B.S., U.S. Military Academy
 M.B.A., University of Southern California
- MAJ. Arthur D. Johnson, ARTY**
Tactical Officer, USCC
 B.S., U.S. Military Academy
 M.A., University of Illinois
- MAJ. Bruce C. Johnson, ARTY**
Assistant Professor, Operations Division, Office of the Dean
 B.S., U.S. Military Academy
 M.S., University of Michigan
- MAJ. Charles E. Johnson, ARTY**
Admissions Officer
 B.S., U.S. Military Academy
 M.A., University of Illinois
- MAJ. Charles R. Johnson, INF**
Assistant S4, Office of Physical Education
 B.S., U.S. Military Academy
- MAJ. Hugh P. Johnson, CE**
Assistant Professor of Mathematics
 B.S., U.S. Military Academy
 M.S., Ohio State University

- MAJ. John P. Johnson, III, CML C**
Assistant Professor of Physics
 B.S., U.S. Military Academy
 M.S., U.S. Naval Postgraduate School
- LTC. Malcolm D. Johnson, CE**
Associate Professor of Civil Engineering
 B.S., U.S. Military Academy
 M.S.C.E., Texas A&M
- MR. Maurice A. Johnson**
Instructor in Physical Education
 B.S., Minot State College
 M. Ed., Springfield College
- CPT. Robert E. Johnston, CE**
Assistant Professor of Social Sciences
 B.A., B.S.M.E., Rice University
 B.A., M.A., (Oxon)
- MAJ. James H. Jones, ARMOR**
Assistant Professor of Latin American Geography
 B.S. U.S. Military Academy
 M.S., University of Illinois
- MAJ. Peter G. Jones, ARTY**
Assistant Professor of English
 B.S., U.S. Military Academy
 M.A., Columbia University
- LTC. Robert W. Jones, JAGC**
Assistant Professor of Law
 B.B.A., St. Mary's University
 LL.B., St. Mary's University
- COL. Amos A. Jordan, Professor**
Deputy Head of Department of Social Sciences
 B.S., U.S. Military Academy
 B.A., M.A., (Oxon)
 Ph. D., Columbia University
- MAJ. Howell H. Jordan, INF**
Instructor in English
 B.S., U.S. Military Academy
 M.A., Columbia University
- CPT. Francis W. Joynt, III, JAGC**
Instructor in Law
 B.A., Niagara University
 LL.B., St. John's University
- LT. Philip S. Justis, CE**
Instructor in Astronomy
 B.S., City College of New York
 M.A., University of North Carolina
- LTC. Michael E. Kallman, CE**
Assistant Professor of Engineering Fundamentals
 B.S., U.S. Military Academy
 M.S., Iowa State University
- MAJ. Edward V. Karl, ORD C**
Assistant Professor of Mathematics
 B.S., St. Bonaventure University
 M.S., University of Delaware
- COL. Warren H. Karstedt, TC**
Associate Professor of Mathematics
 B.A., Ripon College
 M.S., Purdue University
 Armed Forces Staff College
 Industrial College of the Armed Forces
- CPT. Robert B. Karsteter, ARTY**
Instructor in Mechanics
 B.S., M.S., Texas Agricultural and Mechanical College
- MAJ. Walter W. Kastenmayer, Jr., CML C**
Assistant Professor, Operations Division, Office of the Dean
 B.S., St. Bernadine of Siena College
 M.S., University of Virginia
- MAJ. Kenneth I. Kawano, CML C**
Instructor in Chemistry
 B.S., Massachusetts Institute of Technology
 Ph. D., University of Wisconsin
- MAJ. Patrick J. Kelly, CE**
Instructor in Physics
 B.S., Marquette University
 M.S., U.S. Naval Postgraduate School
- LTC. Charles R. Kemble, ARMOR**
Associate Professor of English
 B.S., U.S. Military Academy
 M.A., University of Pennsylvania
- MAJ. Peter J. Kenny, JAGC**
Assistant Professor of Law
 B.S., Fordham University
 LL.B., Cornell University
- MAJ. Richard D. Kenyon, TC**
Assistant Professor of Mechanics
 B.S., U.S. Military Academy
 M.S., Princeton University
- MR. William G. Kerr**
Assistant Librarian, USMA Library
 B.A., Middlebury College
 B.L.S., McGill University

- MAJ. John A. Keutmann, INF**
Instructor in Physical Education
B.S., U.S. Military Academy
- CPT. Hugh D. Kevin, USAF**
Instructor in Mechanics
B.S., U.S. Military Academy
M.S., Air Force Institute of Technology
- CWO Harold L. Killian**
Laboratory Officer, Department of Ordnance
- LTC. James R. Kintz, MI**
Deputy Director of Research and Chief, Evaluation and Analysis Division
B.S., U.S. Military Academy
M.A., University of Pennsylvania
- LTC. Gilbert W. Kirby, Jr., Professor**
Deputy Head of Department of Earth, Space and Graphic Sciences
B.S., U.S. Military Academy
M.S., California Institute of Technology
Army War College
- MAJ. Richard D. Kittelson, INF**
Assistant Professor of Chemistry
B.S., U.S. Military Academy
M.S., Pennsylvania State University
- MAJ. George R. Kleb, CE**
Assistant Professor of Mechanics
B.S., U.S. Military Academy
M.S., University of Illinois
- LTC. Jeffrey D. Knight, INF**
Assistant Professor of the German Language
B.S., U.S. Military Academy
M.A., Middlebury College
- MR. Robert M. Knight**
Basketball Coach
B.A., Ohio State University
- COL. Frank J. Kobes, Jr., Professor**
Director of Physical Education
B.S., U.S. Military Academy
B.A., Doane College
M.A., New York University
- CPT. William G. Kosco, CE**
Instructor in Mathematics
B.S., U.S. Military Academy
M.S., University of Illinois
- MAJ. Darryle L. Kouns, CE**
Instructor in Ordnance Engineering
B.S., U.S. Military Academy
M.S., Purdue University
- MR. John D. Kraft**
Research Psychologist, Office of Research
B.A., M.A., Butler University
- MAJ. Nicholas S. H. Krawciw, ARMOR**
Instructor in Military Psychology and Leadership
B.S., U.S. Military Academy
- MR. John B. Kress**
Associate Director, Office of Physical Education
B.S., M.A., Columbia University
- MR. Herbert J. Kroeten**
Associate Director, Office of Physical Education
B.S., M. Ed., University of Minnesota
- MR. Richard E. Kuehne**
Director, USMA Museum
B.A., Amherst College
- CPT. Norman J. Kuklinski, CE**
Assistant Professor of Mechanics
B.S., U.S. Military Academy
M.S., University of Illinois
- MAJ. Frederick W. Kulik, ARTY**
Assistant Professor in Physics
B.S., U.S. Military Academy
M.S., Purdue University
- MAJ. Eugene F. Laborne, Jr., ORD C**
Instructor in Ordnance Engineering
B.S., U.S. Military Academy
M.S., New Mexico State University
- CPT. Peter F. Lagasse, CE**
Instructor in Mechanics
B.S., U.S. Military Academy
M.S., University of California
- MAJ. Kenneth E. Lager, ARTY**
Assistant Professor, Ordnance Engineering
B.S., U.S. Military Academy
M.S., University of Arizona
- MAJ. Ollie L. Langford, ARTY**
Instructor in Physical Education
B.S., U.S. Military Academy

- MAJ. Leslie G. Langseth, CE**
Instructor in Physics
 B.S., U.S. Military Academy
 M.S., University of California
- MISS Mary E. Lassany**
Reference Librarian, USMA Library
 B.A., M.S. (L.S.), University of Southern California
- MAJ. George C. Lawton, INF**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- MAJ. Robert A. Leach, SIG C**
Sr Instructor and Operations Officer, Academic Computer Center, Office of the Dean
 B.S., Texas Technological College
 M.S., University of Arizona
- MR. Pingkun Lee**
Cataloger, USMA Library
 LL.B., University of Peiping, China
- MAJ. Robert C. Lee, CE**
Instructor in Mathematics
 B.S., M.S., Northeastern University
- MAJ. Robert L. Leech, SIG C**
Instructor in Electricity
 B.S., U.S. Military Academy
 M.S.E.E., Purdue University
- LTC. Albert C. Lehman, CE**
Executive Officer, Third Regiment, USCC
 B.S., U.S. Military Academy
 M.E., Texas A&M
- MRS. Elizabeth M. Lewis**
Fine Arts Librarian and Instructor, USMA Library
 B.A., Purdue University
 M.L.S., Pratt Institute
- MAJ. Warfield M. Lewis, Jr., ORD C**
Instructor in Mathematics
 B.S., U.S. Military Academy
 M.S.E., Purdue University
- MR. William F. Lewis**
Instructor in Physical Education
 B.S., Springfield College
 M.A., New York University
- MAJ. Antonio José de Lima-Câmara,**
Brazilian Army
Instructor in Portuguese
 B.S., Academia Militar das Agulhas Negras
- MR. George W. Linck**
Assistant Director, Office of Physical Education
 B.S., Springfield College
 M.A., Columbia University
- COL. George A. Lincoln, Professor**
Head of Department of Social Sciences
 B.S., U.S. Military Academy
 B.A., M.A. (Oxon)
- MAJ. Richard E. Littlefield, INF**
Assistant Professor of World Geography
 B.S., U.S. Military Academy
 M.A., American University of Beirut
- MR. Al LoBalbo**
Assistant Basketball Coach
 B.S., State College of Iowa
- LTC. Kilbert E. Lockwood, ORD C**
Instructor in Ordnance Engineering
 B.S., U.S. Military Academy
 M.S., University of Michigan
- MAJ. Bernardo Loeffke, INF**
Assistant Professor, Russian
 B.S., U.S. Military Academy
 M.A., Middlebury College
- MAJ. Jack R. Logan, IN**
Assistant Professor of Social Sciences
 B.S., U.S. Military Academy
 M.P.A., Princeton University
- MAJ. Benjamin A. Logerquist, TC**
Assistant Professor of Mechanics
 B.S., University of Wisconsin
 M.S., Virginia Polytechnic Institute
- MR. Alexander A. Longo**
Research Psychologist, Office of Research
 B.A., Loyola University (Los Angeles)
 M.A., Fordham University
- COL. Frederick C. Lough, Professor**
Head of Department of Law
 B.S., U.S. Military Academy
 LL.B., Columbia University
 Industrial College of the Armed Forces
- COL. William J. Love, CE**
Commanding Officer, First Regiment, USCC
 B.S., U.S. Military Academy
 M.S., Massachusetts Institute of Technology
 Air War College

- LTC. William F. Luebbert, SIG C**
Associate Professor; Director, Educational Resources and Technology Division, Office of the Dean
 B.S., U.S. Military Academy
 M.S., E.E.A., Ph. D., Stanford University
- MAJ. Eugene S. Lynch, ARTY**
Instructor in Mathematics
 B.S., U.S. Military Academy
 M.S., Rensselaer Polytechnic Institute
- CPT. James F. Lynch, ARTY**
Instructor in German
 B.S., U.S. Military Academy
 M.A., Middlebury College
- MR. Richard Lyon**
Assistant Football Coach
 B.A., Colgate University
 M.S., Springfield College
- COL. Donald G. MacWilliams, Professor**
Head of Department of Chemistry
 B.S., U.S. Military Academy
 M.S., Ohio State University
 Ph. D., Rensselaer Polytechnic Institute
- MAJ. Raymond M. Macedonia, AGC**
Instructor in Military Psychology and Leadership
 B.B.A., University of Pittsburgh
 M.B.A., Wharton of University of Pennsylvania
- MAJ. Richard R. Maglin, ARMOR**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- MAJ. Kevin L. Maher, TC**
Instructor of Social Sciences
 A.B., Fordham University
 M.B.A., Harvard University
- MAJ. Paul Makowski, ARTY**
Assistant Professor of Mathematics
 B.S., U.S. Military Academy
 M.S., Rensselaer Polytechnic Institute
- CPT. Wade V. Mallard, JAGC**
Instructor in Law
 A.A., Augusta College
 B.B.A., LL.B., University of Georgia
- MAJ. John B. Mallonee, ARTY**
Instructor in Military Psychology and Leadership
 B.S., University of Maryland
 M.S., University of Miami
- MR. Nicholas Maltzoff**
Assistant Professor, Russian
 S.M., École Bréguet, France
- CPT. Leo J. Mansi, Jr., FC**
Executive Officer, Educational Resources and Technology Division, Office of the Dean
 B.S., La Salle College
- MAJ. Robert H. Marcrum, ARTY**
Instructor in Military Psychology and Leadership
 B.S., U.S. Military Academy
 M.S., Purdue University
- MAJ. Don Markham, INF**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- MAJ. Byron D. Marsh, ARMOR**
Assistant Professor of Mechanics
 B.S., U.S. Military Academy
 M.S., University of Illinois
- MAJ. Lewis R. Martin, ARTY**
Assistant Professor of Chemistry
 B.S., U.S. Military Academy
 M.S., Pennsylvania State University
- LTC. Robert N. Martin, INF**
Cadet Extracurricular Activities Officer, USCC
 B.S., U.S. Military Academy
 M.S., Rensselaer Polytechnic Institute
- MAJ. John E. Martling, INF**
Instructor in Military Psychology and Leadership
 B.S., U.S. Military Academy
 M.S., Purdue University
- MAJ. John Mason, ARMOR**
Senior Armor Instructor, Office of Military Instruction
 B.A., University of Massachusetts
- LTC. John W. Mastin, CE**
Associate Professor, Director, Operations Division, Office of the Dean
 B.S., U.S. Military Academy
 M.S., M.E., Harvard University

- MAJ. Robert N. Mathis, ARTY**
Assistant Professor of Physics
 B.S., U.S. Military Academy
 M.S., Tulane University
- CPT. James S. Mathison, ARMOR**
Admissions Officer
 B.S., U.S. Military Academy
 M.A., The Ohio State University
- MAJ. Elmer C. May, ARTY**
Instructor in History of the Military Art
 B.S., M.A., Iowa State University
- MAJ. William S. May, INF**
Assistant Professor of English
 B.S., U.S. Military Academy
 M.A., University of Pennsylvania
- MAJ. Thomas J. McAniff, INF**
Assistant Professor of English
 B.S., U.S. Military Academy
- CPT. Joseph S. McAuliffe, JAGC**
Assistant Professor of Law
 A.B., La Salle College
 LL.B., Harvard University
- MAJ. Fox McCarthy, INF**
Assistant Information Officer
 B.S., U.S. Military Academy
- MR. John McCauley**
Assistant Football Coach
 B.S., Boston College
 M. Ed., Pitt State College
- MAJ. Frederick J. McConville, ARTY**
Assistant Professor and Operations Officer, Office of the Dean
 B.S., U.S. Military Academy
 M.P.A., Harvard University
- REVEREND Robert F. McCormick**
Assistant Catholic Chaplain, USMA
 B.A., Fordham University
- LTC. Billy A. McDonald, ARTY**
Executive Officer, 4th Regiment, USCC
 B.A., University of North Carolina
- MAJ. Robert A. McDonald, INF**
Instructor in Mathematics
 B.S., U.S. Military Academy
- MAJ. Bruce B. McDonough, INF**
S1, Office of Physical Education
 B.S., U.S. Military Academy
- MAJ. James B. McGough, ORD C**
Instructor in Ordnance Engineering
 B.A., La Salle College
 M.S., University of Alabama
- MISS Catherine McGuinn**
Order Librarian, USMA Library
- CPT. John K. McGuirk, JAGC**
Instructor in Law
 B.A., Manhattan College
 LL.B., Boston College Law School
- MAJ. David P. McLain, Jr. ARTY**
Instructor in English
 A.B., Davidson College
 M.A., University of Pennsylvania
- MAJ. Godwin P. McLaughlin, INF**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- LTC. Walter L. McMahon, INF**
Instructor in English
 B.A., University of Dayton
 M.A., Pennsylvania State University
- MAJ. David A. McNerney, INF**
Assistant Professor, French
 B.S., U.S. Military Academy
 M.A., Middlebury College
- MAJ. Dana G. Mead, AR**
Assistant Professor of Social Sciences
 B.S., U.S. Military Academy
 Ph. D., Massachusetts Institute of Technology
- MAJ. Warne D. Mead, INF**
Building and Grounds Officer, Office of Physical Education
 B.S., U.S. Military Academy
- MAJ. Ivan R. Mechly, Jr., CML C**
Instructor in Mathematics
 B.S., U.S. Military Academy
 M.E., Texas A&M University
- MAJ. Peter S. Meckel, MI**
Assistant Professor, Russian
 B.A., San Jose State College
 M.A., Middlebury College
- LTC. Gerald W. Medsger, CE**
Assistant Professor of Mathematics
 B.S., U.S. Military Academy
 M.S., California Institute of Technology

MAJ. John J. P. Meehan, Jr., INF
Assistant Professor of Electricity
B.S., U.S. Military Academy
M.S., Tulane University

MR. William Meek
Assistant Football Coach
B.S., University of Tennessee

MAJ. Ralph E. Miles, CE
Instructor in Mathematics
B.S., U.S. Military Academy
M.S., Ohio State University

MAJ. James R. C. Miller, CE
Instructor in Civil Engineering
B.S., U.S. Military Academy
B.S.C.E., M.S.N.E., University of Michigan

MAJ. Milton L. Miller, ARTY
Assistant Professor of Chemistry
B.S., U.S. Military Academy
M.S., Pennsylvania State University

MAJ. Robert H. Miller, CML C
Assistant Professor of Chemistry
B.S., U.S. Military Academy
M.S., Ph. D., Pennsylvania State University

MAJ. William R. Miller, CE
Assistant Professor of Civil Engineering
B.S., U.S. Military Academy
M.S.C.E., University of Illinois

MAJ. Robert R. Mills, Jr., CE
Assistant Professor of Physics
B.S., University of Wisconsin
M.S., North Carolina State College

MR. Robert M. Mischak
Assistant Football Coach
B.S., U.S. Military Academy

MAJ. Giac P. Modica, ARTY
Tactical Officer, USCC
B.A., St. Bonaventure University

MR. Ray W. Moniz
Curator of Design, USMA Museum
B.F.A., Syracuse University

MAJ. Thomas R. Mooney, ARTY
Instructor in Physics
B.S., U.S. Military Academy
M.S., Pennsylvania State University

MAJ. Moorad Mooradian, QM
Instructor of Social Sciences
Ed. B., Rhode Island College
M.A., University of Rhode Island

MAJ. Marshall L. Moore, INF
Instructor in Electricity
B.S., U.S. Military Academy
M.S.E.E., Georgia Institute of Technology

MAJ. Riley R. Moore, 3d, INF
Instructor in Spanish
B.S., U.S. Military Academy
M.A., Middlebury College

CPT. Thomas L. Moore, Jr., JAGC
Instructor in Law
B.B.A., LL.B., University of Miami

MAJ. Leon K. Moraski, CE
Instructor in Astronomy
B.S., U.S. Military Academy
M.S., Air Force Institute of Technology

1LT. William W. Morgan, Jr., AGC
Instructor in English
A.B., North Georgia College
M.A., University of Tennessee

LTC. James L. Morrison, Jr., AR
Assistant Professor of Social Sciences
B.A., Virginia Military Institute
M.A., University of Virginia

CPT. Thomas W. Morriss, JAGC
Instructor in Law
B.A., Yale University
LL.B., Harvard Law School

MAJ. Theodore J. Mortensen, Jr., INF
Instructor in Physical Education
B.S., Pennsylvania State University

MAJ. Robert G. Moscatelli, ARMOR
Instructor, Office of Military Instruction
B.S., U.S. Military Academy

MR. Herbert C. Mudie
Admissions Officer
B.A., St. Lawrence University

MAJ. William J. Mullen, III, INF
Tactical Officer, USCC
B.S., U.S. Military Academy

- MAJ. Jay C. Mumford, MI**
Instructor of Social Sciences
 Diploma, LDS Institute of Religion
 A.S., Weber College
 B.A., B.S., M.A., University of Utah
- MAJ. John T. Murchison, Jr., ARMOR**
Assistant Professor of English
 B.S., U.S. Military Academy
 M.A., Columbia University
- CPT. Eugene W. Murphy, JAGC**
Instructor in Law
 B.S., Georgetown University
 LL.B., Marquette University
- MAJ. James R. Murphy, USAF**
Assistant Professor of Social Sciences
 B.S., U.S. Military Academy
 B.A., M.A. (Oxon)
- MAJ. Samuel L. Myers, Jr., ARMOR**
Assistant Professor of Automotive Engineering
 B.S., U.S. Military Academy
 M.S., University of Michigan
- MAJ. Ramon A. Nadal, II, INF**
Instructor in Military Psychology and Leadership
 B.S., U.S. Military Academy
 M.S., Oklahoma State University
- MAJ. John O. Neal, Jr., ARTY**
Instructor in French
 B.S., U.S. Military Academy
 M.A., Middlebury College
- CPT. John J. Neiger, III, ARTY**
Assistant Operations Officer, USCC
 B.S., U.S. Military Academy
- CPT. Raymond J. Nelson, SIG C**
Instructor in Physics
 B.S., Rensselaer Polytechnic Institute
 M.S., U.S. Naval Postgraduate School
- CPT. Robert J. Nicholson, AIS**
Admissions Officer
 B.S., U.S. Military Academy
- LTC. Jack Norton, JAGC**
Assistant Professor of Law
 A.B., Ohio University
 LL.B., University of Miami
 M.A., Fletcher School of Law and Diplomacy
- LTC. Roger H. Nye, AR**
Associate Professor of Social Sciences
 B.S., U.S. Military Academy
 M.P.A., Princeton University
- REVEREND Edwin F. O'Brien**
Assistant Catholic Chaplain, USMA
 A.B., M.A., St. Joseph's Seminary
- MAJ. Kevin J. O'Neill, ARTY**
Instructor in German
 B.S., U.S. Military Academy
 M.A., Middlebury College
- MAJ. John H. Oakes, ARTY**
Senior Artillery Instructor, Office of Military Instruction
 B.S., U.S. Military Academy
- MAJ. William E. Odom, AR**
Assistant Professor of Social Sciences
 B.S., U.S. Military Academy
 M.A., Columbia University
- MAJ. Charles T. Ogren, CE**
Instructor in Civil Engineering
 B.S., U.S. Military Academy
 M.S., Iowa State University
- LTC. Thomas C. Oldham, JAGC**
Associate Professor of Law
 LL.B., University of Miami
 LL.M. (in international law), New York University
- CPT. John B. Oliver, ARTY**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- MAJ. Clarence A. Olsen, MI**
Assistant Professor of the French Language
 A.B., M.A., New York State College for Teachers
- MAJ. Thomas E. Olson, CE**
Assistant Professor of Electricity
 B.S., U.S. Military Academy
 M.S.E., Purdue University
- MAJ. Lee D. Olvey, AR**
Associate Professor of Social Sciences
 B.S., U.S. Military Academy
 B.A., M.A., (Oxon)
- CPT. Enoch M. Overby, III, JAGC**
Instructor in Law
 B.A., The Citadel
 LL.B., Tulane University

- MAJ. Donald J. Palladino, CE**
Assistant Professor of Civil Engineering
 B.S., U.S. Military Academy
 M.S., University of Illinois
- MAJ. Dave R. Palmer, ARMOR**
Assistant Professor of History of the Military Art
 B.S., U.S. Military Academy
 M.A., Duke University
- MR. Ronald D. Palmer, F.S.O.**
Instructor of Social Sciences
 B.A., Howard University
 M.A., Johns Hopkins University
- MR. Joseph M. Palone**
Instructor in Physical Education and Soccer Coach
 B.S., Cortland State College
- MR. Guy S. Parcel**
Trainer, Office of Physical Education
 B.S., M.S., Indiana University
- MR. Duane Parcells**
Assistant Football Coach
 B.A., Wichita State University
- LT. Delbert M. Parker, ARTY**
Instructor in Physical Education
 B.S., M.S., University of California at Los Angeles
- MAJ. John R. Parker, INF**
Associate Director for Computers, Office of the Dean
 B.S., U.S. Military Academy
 M.S., Arizona State University
- MAJ. William R. Parks, CE**
Instructor in Mechanics
 B.S., U.S. Military Academy
 M.S., Purdue University
- MAJ. William T. Parks, INF**
Plans Officer, Office of Military Instruction
 B.S., U.S. Military Academy
- MAJ. Russell L. Parsons, ARTY**
Assistant Professor of Mechanics
 B.S., U.S. Military Academy
 M.S.M.E., M.S.A.E., University of Southern California
- CPT. Frank A. Partlow, Jr., AT**
Instructor of Social Sciences
 B.S., U.S. Military Academy
 M.A., Stanford University
- CPT. Raymond J. Paske, ARTY**
Aide-de-Camp, USCC
 B.S., U.S. Military Academy
- LT. Dale Q. Pearson, USN**
Tactical Officer, USCC
 B.S., U.S. Naval Academy
- LTC. Donald D. Pfeifer, SIG C**
Cadet Activities Officer, USCC
 B.S., U.S. Military Academy
 M.B.A., Harvard University
- LTC. John DeW. Pelton, INF**
Executive Officer, First Regiment, USCC
 B.S., U.S. Military Academy
- MAJ. David L. Pemberton, INF**
S1, Fourth Regiment, USCC
 B.S., U.S. Military Academy
- MAJ. Newton B. Penrose, SIG C**
Instructor in Electricity
 B.S., U.S. Military Academy
 M.S.E.E., Polytechnic Institute of Brooklyn
- MAJ. Harry D. Penzler, ARTY**
Instructor, Office of Military Instruction
 B.S., Westminster College
- MISS. Margaret Perry**
Circulation Librarian, USMA Library
 A.B., Western Michigan University
 M.S.L.S., Catholic University of America
- CPT. Richard A. Peterson, JAGC**
Instructor in Law
 B.A., LL.B., University of Minnesota
- CPT. Robert L. Phillips, ARMOR**
Aide-de-Camp, to the Superintendent
 B.S., U.S. Military Academy
- MISS. Anna E. Pierce**
Acting Chief, Technical Services and Acquisitions Division, USMA Library
 B.S., New York State Teachers College (Geneseo)

- LTC. Ralph D. Pinto, SIG C**
Associate Professor of History of the Military Art
 B.S., U.S. Military Academy
 M.B.A., Harvard University
 LL.B., Georgetown University
- MAJ. Martin L. Plassmeyer, ARMOR**
Instructor in English
 B.S., U.S. Military Academy
- CPT. Frederick B. Plummer, II, CE**
Instructor in Mechanics
 B.S., U.S. Military Academy
 M.S., University of Illinois
- MAJ. Thomas F. Plummer, Jr., ARTY**
Assistant Professor of Geography of the USSR
 B.S., U.S. Military Academy
 M.S., University of Illinois
- MAJ. Anthony G. Pokorny, Jr., ARTY**
Instructor in Engineering Fundamentals
 B.S., U.S. Military Academy
 M.S., University of Michigan
- COL. Jack M. Pollin, Professor**
Deputy Head of Department of Mathematics
 B.S., U.S. Military Academy
 M.S., University of Pennsylvania
 M.S., Rensselaer Polytechnic Institute
 M.A., George Washington University
 Army War College
- MAJ. Donald R. Pope, CE**
Instructor in Mechanics
 B.S., U.S. Military Academy
 M.E., Texas Agricultural and Mechanical College
- CPT. Robert T. Pope, JAGC**
Instructor in Law
 B.A., Georgia Tech
 LL.B., Emory University
- MAJ. Marko L. Popovich, ARTY**
Instructor in Mathematics
 B.S., U.S. Military Academy
 M.S., Rensselaer Polytechnic Institute
- MAJ. John J. Prentice, USAF**
Assistant Professor of Ordnance Engineering
 B.A.E., University of Minnesota
 M.S.A.E., USAF Institute of Technology
- MAJ. Edward G. Preston, SIG C**
Associate Director for Educational Systems, Office of the Dean
 B.S., University of Michigan
 M.S., University of Arizona
- MAJ. Walter L. Pritchard, Jr., ARMOR**
Instructor in English
 B.S., U.S. Military Academy
 M.A., Columbia University
- MAJ. Donald B. Pruitt, MI**
Instructor in Russian
 B.A., Middle Tennessee State College
 M.A., Georgetown University
- MAJ. Herbert C. Puscheck, CE**
Assistant Professor of Management Engineering
 B.S., U.S. Military Academy
 M.S., Purdue University
- MAJ. Robert A. Rachek, INF**
Chief, Military Science Branch, Office of Military Instruction
 B.S., U.S. Military Academy
- LTC. Loren E. Radford, ARTY**
Associate Professor of Physics
 B.S., University of Washington
 M.S., Ph. D., University of Virginia
- MAJ. Charles M. Radler, CE**
Assistant Professor of Mechanics
 B.S., U.S. Military Academy
 M.S., Ph. D., University of Illinois
- MAJ. James H. Ramsden, ARTY**
Instructor in Chemistry
 B.S., U.S. Military Academy
 M.S., Johns Hopkins University
- MAJ. Lewis C. Ranch, ARMOR**
Assistant Professor, Operations Division, Office of the Dean
 B.S., U.S. Military Academy
- MR. Kenneth Rapp**
Assistant Archivist, USMA Library
- MAJ. James W. Ray, CE**
Instructor, Office of Military Instruction
 B.S., U.S. Military Academy
 M.S., Ohio State University
- LTC. Joseph T. Rears, ARTY**
Assistant Professor, French
 B.S., U.S. Military Academy
 M.A., Middlebury College

CPT. Frank J. Redd, USAF

Instructor in Mechanics

B.S., U.S. Military Academy

M.S., Stanford University

MAJ. Roger R. Redhair, ARTY

Instructor in Mathematics

B.S., U.S. Military Academy

MAJ. Leonard F. B. Reed, Jr., ARTY

Assistant Professor of History of Military Art

B.S., U.S. Military Academy

M.A., Duke University

MAJ. Donald W. Reeves, CE

Assistant Professor of Geography

B.S., University of Illinois

M.S., Ohio State University

LTC. Howard Reiner, CML C

Assistant Director of Instruction and Associate Professor, Department of Foreign Languages

B.A., Tufts University

M.A., Boston University

LTC. Stanley E. Reinhart, Jr., ARTY

Associate Professor of Electricity

B.S., U.S. Military Academy

M.S.E.E., Ph. D., Georgia Institute of Technology

COL. Walter J. Renfro, Jr., Professor

Head of Department of Foreign Languages

B.S., U.S. Military Academy

M.A., Ph. D., Columbia University

Armed Forces Staff College

LTC. William D. Renner, SIG C

Senior Signal Instructor, Office of Military Instruction

B.S., U.S. Military Academy

MAJ. Richard L. Reynard, ARTY

Assistant Professor of Astronomy

B.S., U.S. Military Academy

M.S., University of Southern California

CPT. William J. Reynolds, CE

Instructor in Mathematics

B.S., U.S. Military Academy

MR. John P. Riley

Assistant Director of Athletics and Hockey Coach

B.A., Dartmouth College

MAJ. Robert W. Riordan, Jr., CML C

Assistant Professor of Physics

B.S., U.S. Military Academy

M.S., Pennsylvania State University

SP5 Jerry T. Roberto

Instructor of Computer Programming, Office of the Dean

B.S., Newark College of Engineering

M.S., Harvard University

CPT. Walter D. Robertson, INF

Instructor, Office of Military Instruction

B.S., U.S. Military Academy

MAJ. Nicholas J. Robinson, INF

Instructor in History of the Military Art

B.S., U.S. Military Academy

MAJ. Louis B. Rodenberg, Jr., CE

Assistant Professor of Engineering Fundamentals

B.S., U.S. Military Academy

M.S., Princeton University

BG Bernard W. Rogers, USA

Commandant of Cadets

B.S., U.S. Military Academy

B.A., M.A., Oxford University, England

Army War College

MAJ. Gordon B. Rogers, Jr., ARMOR

Instructor in Geography

B.S., U.S. Military Academy

M.A., University of Wisconsin

LTC. Manley E. Rogers, CE

Associate Dean

B.S., U.S. Military Academy

M.S.C.E., California Institute of Technology

LTC. William B. Rogers, CE

Associate Professor of Engineering Fundamentals

B.S., University of Tennessee

M.A.E., University of Florida

- MAJ. Robin J. Roller, AR**
Assistant Professor of Social Sciences
 B.S., U.S. Military Academy
 M.P.A., Harvard University
 M.A., The Fletcher School of Law and
 Diplomacy
- MAJ. Richard G. Rose, CML C**
Instructor in Chemistry
 A.B., San Jose State College
 M.A., University of California
- LTC. James R. Ross, MI**
*Assistant Professor of the Chinese Lan-
 guage*
 B.A., University of California
- MAJ. Lawrence C. Ross, ORD C**
*Assistant Professor of Ordnance Engi-
 neering*
 B.S., U.S. Military Academy
 M.S., Purdue University
- SMAJ. Leonard Ross**
Pistol Coach
- LTC. Early J. Rush, III, CE**
Assistant Professor of Civil Engineering
 B.S., U.S. Military Academy
 M.S.E., Princeton University
- MR. J. Thomas Russell**
*Chief, Special Collections Division,
 USMA Library*
 A.B., Kenyon College
 M.L.S., University of Michigan
- LTC. John Rutledge, Jr., CE**
*Assistant Professor of History of the
 Military Art*
 B.S., U.S. Military Academy
 M.S., University of Illinois
- MR. John E. Ryan, Jr.**
*Swimming Coach and Assistant Business
 Manager*
 B.S., M.A., Ohio State University
- MAJ. Richard C. Sadler, SIG C**
Instructor in Mathematics
 B.S., Oregon State University
 M.S., University of Arizona
- MAJ. Charles P. Saint, INF**
Assistant S1, USCC
 B.S., U.S. Military Academy
- MR. Samuel G. Saldívar**
Assistant Professor, Spanish
 B.A., M.A., Florida State University
- MAJ. John B. Sampson, ARTY**
Instructor in Spanish
 B.S., U.S. Military Academy
 M.A., Middlebury College
- COL. Robert W. Samz, ORD C**
Associate Professor of Ordnance
 B.S., U.S. Military Academy
 M.S.M.E., University of Michigan
- MAJ. Joseph F. Santilli, Jr., INF**
Assistant Professor, French
 B.S., U.S. Military Academy
 M.A., Middlebury College
- COL. Edward A. Saunders, Professor**
Head of Department of Physics
 B.S., U.S. Military Academy
 M.S.E.E., Purdue University
 Ph. D., Rensselaer Polytechnic Insti-
 tute
- SP4 James W. Sauve**
Instructor in Physical Education
 B.S., West Chester State College
- LTC. William H. Schempf, USA**
Director of Music
 B.M., University of Wisconsin
 M.M., Ph. D., University of Rochester
- CPT. Robert J. Schiemann, ARMOR**
Instructor in German
 B.S., U.S. Military Academy
 M.A., Middlebury College
- COL. Charles H. Schilling, Professor**
*Head of Department of Military Art and
 Engineering*
 B.S., U.S. Military Academy
 M.S.C.E., University of California
 Ph. D., Rensselaer Polytechnic Insti-
 tute
- MAJ. Peter B. Schmidt, SIG C**
Instructor in French
 B.S., U.S. Military Academy
 M.A., Middlebury College
- MAJ. Marshall D. Schoonmaker, ARMOR**
Assistant Professor of Astronomy
 B.S., U.S. Military Academy
 M.S., University of Southern Califor-
 nia

- MR. Tad Schroeder**
*Assistant Director of Athletics for Ad-
missions Support and Assistant Foot-
ball Coach*
B.A., LL.B., University of Cincinnati
- MAJ. Joseph H. Schwar, Jr., INF**
Tactical Officer, USCC
B.S., U.S. Military Academy
- 1LT. Richard B. Schwartz, ARMOR**
Instructor in English
A.B., University of Notre Dame
M.A., Ph. D., University of Illinois
- MR. William L. Schwartz, IN**
Instructor of Social Sciences
B.S., U.S. Military Academy
M.A., American University
- MAJ. H. Norman Schwarzkopf, INF**
Associate Professor of Mechanics
B.S., U.S. Military Academy
M.S., University of Southern Califor-
nia
- MAJ. Jonathan W. Searles, ARMOR**
Assistant Professor of Mathematics
B.S., U.S. Military Academy
- CPT. Richard S. Seaward, ARTY**
Instructor in Mechanics
B.S., U.S. Military Academy
M.S., State University of New York at
Buffalo
- MAJ. James L. Seeley, ARTY**
Tactical Officer, USCC
B.A., University of Missouri
- LTC. Charles E. Sell, CE**
Instructor in Civil Engineering
B.S., U.S. Military Academy
M.S., Iowa State University
- MAJ. John O. B. Sewall, IN**
Assistant Professor of Social Sciences
B.S., U.S. Military Academy
B.A., M.A. (Oxon)
- MAJ. Thomas K. Seybold, INF**
Instructor in Mechanics
B.S., U.S. Military Academy
M.S., University of Illinois
- LTC. Ronald A. Shackleton, INF**
S4, USCC
B.S., Oklahoma State University
- CPT. Edward W. Shaw, ARMOR**
Tactical Officer, USCC
B.S., Norwich University
- LTC. Merle G. Sheffield, INF**
Associate Professor of Physics
B.S., U.S. Military Academy
M.S., University of Virginia
- MAJ. Michael K. Sheridan, USMC**
Instructor, Office of Military Instruction
B.S., Florida State University
M.S., George Washington University
- CPT. John T. Sherwood, JAGC**
Assistant Professor of Law
B.S., American University
LL.B., Washington College of Law
- MAJ. E. Joe Shimek, II, ARMOR**
Assistant Professor, Russian
B.S., U.S. Military Academy
M.A., Middlebury College
- MAJ. James M. Sigler, CE**
Associate Professor of Mechanics
B.S., U.S. Military Academy
M.S., University of Illinois
- MAJ. Kenneth R. Simila, CML C**
Instructor in Chemistry
B.S., U.S. Military Academy
M.S., U.S. Naval Post Graduate School
- COL. Charles M. Simpson, III, INF**
*Commanding Officer, Fourth Regiment,
USCC*
B.S., U.S. Military Academy
M.P.A., Harvard University
Army War College
- MAJ. Theodore W. Simroe, Jr., ARMOR**
Instructor in English
B.S., U.S. Military Academy
M.A., Columbia University
- CPT. John R. Sisson, IN**
Assistant Professor of Social Sciences
B.A., M.A., Ohio State University
Ph. D., University of California,
Berkeley
- MAJ. Lawrence F. Skibbie, ORD C**
*Assistant Professor of Ordnance Engi-
neering*
B.S., U.S. Military Academy
M.S., New Mexico State University

- MAJ. William J. Skinner, CE**
Assistant Professor of Mathematics
 B.S., U.S. Military Academy
 M.S.E., Princeton University
- MAJ. Anthony A. Smith, CE**
Assistant Professor of Social Sciences
 B.S., U.S. Military Academy
 Diploma, University of Paris
 M.A., The American University
- COL. Frederick A. Smith, Jr., Professor**
Deputy Head of Department of Mechanics
 B.S., U.S. Military Academy
 M.S., Johns Hopkins University
 M.B.A., George Washington University
 Industrial College of the Armed Forces
- MAJ. Lowell G. Smith, ARTY**
Assistant Professor of Engineering Fundamentals
 B.S., U.S. Military Academy
 M.S., Georgia Institute of Technology
- MRS. Marilyn K. Smith**
Reference Librarian, USMA Library
 M.A., University of Colorado
 M.S., Columbia University
- 1LT. Stephen K. Smith, MSC**
Instructor of Social Sciences
 A.B., Indiana University
 B.A. (Oxon)
- LTC. Wesley C. Smith, CE**
Associate Professor of Environment
 B.S., Pennsylvania Military College
 M.A., Columbia University
- MAJ. Quay C. Snyder, TC**
Assistant Professor, Military Psychology and Leadership
 B.S., U.S. Military Academy
 M.S., Purdue University
- MAJ. John E. Sobraske, INF**
Assistant Professor of Engineering Fundamentals
 B.S., U.S. Military Academy
 M.S., Georgia Institute of Technology
- MAJ. Anthony M. Solberg, ARMOR**
Assistant Professor of Mechanics
 B.S., U.S. Military Academy
 M.S., University of Illinois
- MAJ. John K. Solomon, ARTY**
Instructor in Mathematics
 B.S., U.S. Military Academy
- RABBI Avraham Soltes**
Cadet Jewish Chaplain
 B.S., City College of New York
 M.A., Columbia University
 M.H.L., Jewish Institute of Religion
 D.D., Philathea College
 D.H.L., Hebrew Union College
- MAJ. Vernon B. Sones, INF**
Instructor in Military Psychology and Leadership
 B.S., Pennsylvania State University
 M.P.A., University of Pittsburgh
- LCDR. Curtis A. Sorenson, USN**
Assistant Professor of History of the Military Art
 B.S., U.S. Naval Academy
- MR. Robert E. Sorge**
Associate Director, Office of Physical Education
 B.S., Shippensburg State College
 M.A., Columbia University
- MRS. Donna Spaulding**
Cataloger, USMA Library
 A.B., Tusculum College
 M.S., Library Science Syracuse University
- MAJ. Craig H. Spence, ARTY**
Assistant Professor of Mathematics
 B.S., U.S. Military Academy
 M.S., Georgia Institute of Technology
- LTC. Norman A. Spiro, SIG C**
Associate Professor of English
 B.A., New York University
 M.A., Northeastern University
- MAJ. Lon A. Spurlock, II, INF**
Assistant Professor of English
 B.S., U.S. Military Academy
 M.A., Columbia University
- LTC. Thomas J. Stacy, ARTY**
Assistant Professor of the Russian Language
 A.B., San Diego State College
 M.A., Columbia University
- MAJ. George J. Stapleton, INF**
S1, First Regiment, USCC
 B.S., U.S. Military Academy

- MAJ. Normand A. Ste Marie, INF**
Instructor in Military Psychology and Leadership
 B.A., University of Maine
 M.S., Tulane University
- MAJ. Francis R. Stevens, Jr., ARTY**
Instructor in English
 B.S., U.S. Military Academy
 M.A., Columbia University
- LTC. William K. Stockdale, CE**
Instructor in Civil Engineering
 B.S., U.S. Military Academy
 M.S., Ph. D., University of Illinois
- MAJ. Reed L. Stone, USAF**
Assistant Professor of Astronomy
 B.S., U.S. Military Academy
 M.S., University of Michigan
- MR. Gerald C. Stowe**
Curator of History, USMA Museum
 B.S., University of Wisconsin
- MAJ. William B. Streett, Jr.**
Assistant Professor, Research and Analysis Division, Office of the Dean
 B.S., U.S. Military Academy
 M.S., Ph. D., University of Michigan
- MAJ. James R. Strickland, CE**
Assistant Professor of Mathematics
 B.S., U.S. Military Academy
 M.S. (CE and NE), University of Illinois
- MAJ. Frederick G. Stritzinger, V, ARTY**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- MAJ. Peter L. Stromberg, INF**
Instructor in English
 B.S., U.S. Military Academy
 M.A., Cornell University
- CPT. Kimball R. Stuhlmuller, AR**
Tactical Officer, USCC
 B.A., Dickinson College
- MAJ. Carl W. Sullinger, ARTY**
Instructor in English
 B.S., U.S. Military Academy
 M.A., University of Pennsylvania
- MAJ. Robert J. Summary, MSC**
Assistant Professor of Military Hygiene
 B.A., Southern Illinois University
- MAJ. Wallen M. Summers, IN**
Instructor of Social Sciences
 B.S., University of California at Davis
 B.S., U.S. Military Academy
 M.P.A., Harvard University
- COL. Edwin V. Sutherland, Professor**
Head of Department of English
 B.S., U.S. Military Academy
 M.A., Columbia University
 Ph. D., University of Pennsylvania
 Army War College
- MAJ. William E. Sweet, ARTY**
S1, Third Regiment, USCC
 B.S., Bowling Green University
- PFC. Richard W. Taylor**
Instructor in Physical Education
 B.A., M.S., Syracuse University
- MAJ. William J. Taylor, Jr., AR**
Assistant Professor of Social Sciences
 B.S., University of Maryland
 M.A., Ph. D., The American University
- MAJ. Charles A. Teague, INF**
Army Aviation Advisor, Office of Military Instruction
 B.S., Texas Christian University
- MAJ. Gerald D. Tebben, USAF**
Assistant Professor of Physical Geography
 B.S., U.S. Military Academy
 M.S., Texas A&M College
- LTC. Frank B. Tennant, Jr., SIG C**
Associate Director for Television, Office of the Dean
 B.F.A., University of Texas
 M.A., University of Southern California
- MAJ. Marvin L. Thomas, Jr., ARTY**
Instructor in Portuguese
 B.S., U.S. Military Academy
- MAJ. Richard E. Thomas, INF**
Instructor, Office of Military Instruction
 B.S., U.S. Military Academy
- MISS Miriam E. Thompson**
Cataloger, USMA Library
 B.A., University of Connecticut
 M.L.S., Pratt Institute

- MAJ. Thomas B. Throckmorton, INF**
Instructor in Military Psychology and Leadership
B.S., U.S. Military Academy
M.S., Purdue University
- MAJ. Christian C. Thudium, Jr., ARTY**
Instructor of Geography
B.S., U.S. Military Academy
M.A., University of Wisconsin
- MAJ. Donaldson P. Tillar, ARTY**
Instructor in Ordnance Engineering
B.S., U.S. Military Academy
M.S., University of Southern Calif.
- DR. Fritz Tiller**
Associated Professor of German
University of Berlin, Germany
M.A., Middlebury College
Ph. D., Yale University
- MR. Eric G. Tipton**
Baseball and 150-lb. Football Coach
B.A., Duke University
- MAJ. Daniel J. Tobin, INF**
Assistant Professor, Military Psychology and Leadership
B.S., U.S. Military Academy
M.S., Purdue University
- MAJ. Paul W. Tomiczek, Jr., CE**
Assistant Professor of Physics
B.S., U.S. Military Academy
M.S., Pennsylvania State University
- MAJ. Jay C. Toole, QMC**
Instructor in French
B.S., U.S. Military Academy
M.A., Middlebury College
- MAJ. James E. Torrence, INF**
Instructor in History of the Military Art
B.S., U.S. Military Academy
M.A., Duke University
- MAJ. Richard L. Tripp, INF**
Instructor in History of the Military Art
B.S., U.S. Military Academy
M.A., Duke University
- LT. Stephen G. Truesdell, INF**
Instructor in Physical Education
B.S., M.S., University of California
at Los Angeles
- MAJ. Edward H. Turek, USAF**
Assistant Professor of History of the Military Art
B.S., Utah State University
- MAJ. Robert E. Turnbull, INF**
Executive Officer, Admissions Office
B.S., U.S. Military Academy
- MAJ. William G. T. Tuttle, Jr., TC**
Assistant Professor of Social Sciences
B.S., U.S. Military Academy
M.B.A., Harvard University
- MAJ. Erven S. Tyler, ARTY**
Assistant Professor, Spanish
B.S., U.S. Military Academy
M.A., Middlebury College
- LTC. Richard G. Vander Meer, ARMOR S1, USCC**
B.S., U.S. Military Academy
- LTC. Robert D. Vanderslice, MPC**
Assistant Professor of the Spanish Language
B.A., University of Nebraska
M.A., Columbia University
- MAJ. Alex A. Vardamis, ARTY**
Instructor in English
B.S., U.S. Military Academy
M.A., Columbia University
- MR. Henry J. Veix**
Instructor in Physical Education
B.S., Cortland State College
M.A., Columbia University
- MAJ. Robert V. Vermillion, CE**
Tactical Officer, USCC
B.S., U.S. Military Academy
M.S., Princeton University
- 1LT. Brian L. Villa, AR**
Instructor of Social Sciences
A.B., Harvard University
- MR. Claude Viollet**
Assistant Professor, French
B.A., University of Paris (Sorbonne)
M.A., Middlebury College
- COL. John H. Voegtly, MC**
Surgeon and Head of the Department of Military Hygiene
B.S., M.D., University of Pittsburgh

- LTC. Raymond E. Wallace, ARTY**
Instructor in Engineering Fundamentals
 B.S., U.S. Military Academy
 M.S., University of Missouri
- MAJ. Dennis I. Walter, ARTY**
Instructor in Engineering Fundamentals
 B.S., U.S. Military Academy
 M.S., University of Southern California
- MR. Frank E. Walter**
Sports Information Director
 B.S., University of Puget Sound
- MAJ. Howard C. Walters, Jr., ARMOR**
Assistant Professor, Military Psychology and Leadership
 B.S., Washington State University
 M.A., Columbia University
- MAJ. James P. Walters, SIG C**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- MAJ. William J. Weaver, ARTY**
S3, Office of Physical Education
 B.S., U.S. Military Academy
 M.S., University of Oregon
- MAJ. Robert M. Weekly, AT**
Instructor of Social Sciences
 B.S., U.S. Military Academy
 M.A., The American University
- MR. Egon A. Weiss**
Librarian, USMA
 B.A., Harvard University
 M.A., Boston University
 M.S. (Library Science) Simons College
- MAJ. Richard D. Welch, Jr., ARTY**
Assistant Professor of Mechanics
 B.S., U.S. Military Academy
 M.S., University of Illinois
- MISS Marion B. Wellar**
Cataloger, USMA Library
 Library Certificate, Riverside Library School
 University of California
- MAJ. Donald G. Wells, INF**
Tactical Officer, USCC
 B.S., U.S. Military Academy
- MR. Frank A. Wells**
Gymnastics Coach
 B.S., Panzer College
 M. Ed., Rutgers University
- MAJ. Lawrence E. Welsh, ARTY**
Instructor in Mathematics
 B.S., U.S. Military Academy
- LTC. James W. Wensyel, MI**
Associate Professor of English, and Executive Officer
 B.S., U.S. Military Academy
 M.L. & M.A., University of Pittsburgh
- MR. Dennon R. West**
Golf Coach
- CW4 O'Bryan S. West, AGC**
Personnel Officer, USCC
 B.S., Clemson College
- LTC. Robert H. West, ARTY**
Information Officer
 B.S., University of Oklahoma
- CPT. Lyman G. White, Jr., INF**
Instructor in Spanish
 B.S., U.S. Military Academy
 M.A., Middlebury College
- MAJ. John C. Wilkinson, INF**
Instructor in Chemistry
 B.S., U.S. Military Academy
 M.S., Pennsylvania State University
- COL. Sumner Willard, Professor**
Deputy Head of Department of Foreign Languages
 B.A., M.A., Ph. D., Harvard University
- MAJ. Donald B. Williams, ARTY**
Assistant Professor of Physics
 B.S., U.S. Military Academy
 M.S., Rensselaer Polytechnic Institute
- MAJ. Donald R. Williams, ARTY**
Instructor in English
 B.S., U.S. Military Academy
- CPT. George H. Williams, Jr., CE**
Instructor in Physical Education
 B.S., Pennsylvania State University
 M.A., Wheaton College
- MAJ. Glen W. Williams, ORD C**
Instructor in Mechanics
 B.S., Western Kentucky University
 M.S., New Mexico State University

MAJ. Neil S. Williamson, III, ORD C
Assistant Professor of Engineering Fundamentals
 B.S., U.S. Military Academy
 M.S., University of Michigan

MAJ. James S. Willis, Jr., SIG C
Assistant Professor of Physics
 B.S., U.S. Military Academy
 M.S., Ph. D., Rensselaer Polytechnic Institute

MAJ. Frederick L. Wilmoth, ARMOR
Instructor in Spanish
 B.S., U.S. Military Academy
 M.A., Middlebury College

REVEREND Arthur J. Wilson
Assistant Chaplain, USMA
 B.A., Duke University
 B.D., Duke Divinity School

CPT. David L. Windom, INF
Chief, Visitor Control Division
 B.S., U.S. Military Academy

MAJ. Edward K. Wintz, CE
Assistant Professor of Advanced Astronomy
 B.S., University of California
 M.S., The Ohio State University
 Ph. D., The Ohio State University

1LT. Arthur E. Wise, AGC
Research Psychologist, Office of Research
 A.B., Harvard University
 M.B.A., Ph. D., University of Chicago

MAJ. John W. Woodmansee, Jr., ARMOR
Assistant Professor of History of the Military Art
 B.S., U.S. Military Academy
 M.S., George Washington University

MR. John I. Woodruff
Deputy Director of Admissions and Registrar, USMA

MAJ. Richard E. Works, CE
Assistant Professor of Mathematics
 B.S., Northeastern University
 M.S., Iowa State University

MAJ. David C. Young, II, INF
Chief, Admissions Office
 B.S., U.S. Military Academy
 M.A., Columbia University

MAJ. Cedric J. Zabriskie, SIG C
Instructor in Electricity
 B.S., U.S. Military Academy
 M.S.E.E., Georgia Institute of Technology

MAJ. William T. Zaldo, III, ARTY
Assistant Professor of Mathematics
 B.S., U.S. Military Academy

LTC. Robert T. Zargan, ARMOR
Assistant Professor, Military Psychology and Leadership
 B.S., U.S. Military Academy
 M.A., Wayne State University

MAJ. Richard G. Ziegler, INF
Instructor in Physical Education
 B.S., U.S. Military Academy
 M.S., Indiana University

LEGEND:

AGC . . . *Adjutant General's Corps*
AIS . . . *Army Intelligence and Security*
ARTY . . *Artillery*
CE *Corps of Engineers*
CML C . . *Chemical Corps*
FC *Finance Corps*
INF *Infantry*
JAGC . . . *Judge Advocate General's Corps*
ORD C . . *Ordnance Corps*
QMC . . . *Quartermaster Corps*
SIG C . . . *Signal Corps*
TC *Transportation Corps*
USA *United States Army*
USA Ret *United States Army, Retired*
USAF . . . *United States Air Force*
USCC . . . *United States Corps of Cadets*
USMA . . . *United States Military Academy*
USN *United States Navy*

Facilities

General

The military reservation at West Point consists of 16,003 acres. The original purchase of 1,770 acres was made from Stephen Moore in 1790; additional purchases made in 1824, 1879, 1889, 1903, 1905, and 1909 brought the acreage to 3,570.

From 1938 to 1945 the acreage was more than tripled by the acquisition of 11,401 acres to allow for the development and expansion of training facilities. On 1 December 1959 a gift of 1,040 acres by Mr. and Mrs. Gene Leone increased the holdings to the present total.

Of this total, 2,520 acres are the Post proper; they comprise the area lying south of Storm King Mountain between the old Storm King Highway and the Hudson River. Access to the Post proper is by three gates: the Thayer Gate (South Gate), from Highland Falls; the Lee Gate (North Gate), from the old Storm King Highway (Route NY 218); and the Washington Gate (West Gate), from the new Storm King Highway (Route US 9W).

The expansion since 1938 has been toward the west almost as far as Central Valley, N.Y., and toward the south almost as far as Route US 6. Route NY 293 runs from southwest to northeast on about the midline of the entire reservation.

Buildings

ADMINISTRATION BUILDING (1909). Designed by Cram, Goodhue, and Ferguson in Gothic style. It is located on Thayer Road and contains the offices of the Superintendent, the Dean, the Academic Board, the General Staff, the Director of Admissions and Registrar, the office of the cadet hostess, and the Information Office.

BARTLETT HALL (1913, 1938). Formerly the East Academic Building, it is named in memory of Col. William H. C. Bartlett, Professor of Natural and Experimental Philosophy, 1836–1871. The original building, 1913, was designed by Cram, Goodhue, and Ferguson; the east wing, 1938, by Paul Philippe Cret. Both are in Gothic style. Located between Thayer and Cullum Roads, north of the Administration Building. In addition to classrooms and laboratories it contains the offices of the Departments of Electricity, Mechanics, and Physics and Chemistry.

CADET CHAPEL (1910). Designed by Cram, Goodhue, and Ferguson in Gothic style. Located west of, and 300 feet above, the cadet barracks, it dominates the Post proper. The stained glass window over the altar has

27 panels, each depicting a militant Biblical character. The window at the entrance pictures The Revelation of St. John the Divine; it shows also the designs of the Medal of Honor and the Distinguished Service Cross. The windows in the nave are gifts of the several classes; the flags hanging in the nave were used in the War of 1812, the Mexican, Civil, and Spanish-American Wars. The Chapel Organ is the largest church organ in the Western Hemisphere, and contains over 14,000 pipes. The seating capacity is 1,500.

CENTRAL BARRACKS (1851, 1882, 1921). The designers of the 1851 and 1882 sections are not known, although it is likely that Maj. Richard Delafield had much to do with the design of the 1851 section and a Board of Engineers with the 1882 section. Capt. A. B. Proctor, Quartermaster Corps, designed the 1921 section. All are in Tudor style. The three sections form the three sides of a rectangle of which the East Barracks, located at Thayer and Jefferson Roads, forms the fourth side. The headquarters of the Commandant of Cadets is in a wing at the eastern end of the south section.

CHAPEL OF THE MOST HOLY TRINITY (1900). Designed by Heins and La Farge in Gothic style. Located at Mills and Washington Roads, on a sharp rise of ground, this Roman Catholic Chapel is a copy of the St. Ethelreda Carthusian abbey parish church in County Essex, England. The Chapel, expanded in 1958 according to plans prepared by architect Alfred Reinhardt, now has a seating capacity of 550.

CULLUM MEMORIAL HALL (1899). Designed by McKim, Mead, and White in Greco-Roman style. Located on the east side of Cullum Road, across from Doubleday Field, and named after Major General George W. Cullum, USMA 1833, Superintendent 1864–1866, who gave it to house trophies of war and “statues, busts, mural tablets, and portraits of distinguished deceased officers and graduates of the Military Academy.”

EAST BARRACKS (1895). Formerly the West Academic Building, located on Thayer Road opposite Bartlett Hall, designed by Richard M. Hunt in Gothic style. It was converted to cadet barracks in 1958–1959.

FIELD HOUSE (1939). Designed by Paul Philippe Cret. Located on Tower Road southwest of the West Shore Railroad. Used for indoor athletics.

FIRST CLASS CLUB OR THE COMPOUND (1837). Benton, Benet, Crozier Halls, formerly known as the Ordnance Compound, named for Colonel James G. Benton, USMA 1842, first Professor of Ordnance and Gunnery; for Major General Stephen Vincent Benet, USMA 1849, the second Pro-

fessor of Ordnance and Gunnery; and for Major General William Crozier, USMA 1876, a Chief of Ordnance, serves as an activity center for First Classmen and their guests.

GRANT HALL (1931). A wing of the South Barracks on Thayer Road directly across from the Administration Building. It is the cadet reception hall.

GYMNASIUM (1910, 1933, 1937, 1947). The East Gymnasium (1910) was designed by Cram, Goodhue, and Ferguson; the North Gymnasium (1933) by the Quartermaster Corps; the West Gymnasium (1937) by Paul Philippe Cret; and the Central Gymnasium (1947) by Delano and Aldrich. All are in Gothic style. The gymnasium buildings are west of the Superintendent's quarters and north of New North Barracks.

LIBRARY (1964). Designed by Gehron and Seltzer of New York in granite-faced Gothic style. Located at Jefferson and Cullum Roads on the former site of the old Library which had outlived its usefulness. The new building accommodates 500,000 books, reading rooms, seminar rooms, microfilm and audio-visual facilities, as well as space for military and rare book collections.

MICHIE STADIUM (1924, 1963). The football stadium between Delafield and Mills Road, west of the reservoir, designed in 1924 by the Osborn Engineering Co., and in 1963 by Roberts and Schaefer Co., Inc. Named for 1st Lt. Dennis Mahan Michie, USMA 1892, Captain of the first West Point football team, killed in action at San Juan, Cuba in 1898. The seating capacity is 29,425.

SUPERINTENDENT'S QUARTERS (1820). Architect unknown. Designed in Colonial style, and located on Jefferson Road. Col. Sylvanus Thayer was the first Superintendent to live there. Directly to the north are the Commandant's Quarters at the southwest corner of Parke and Washington Roads.

NEW NORTH BARRACKS (1939). Designed by Paul Philippe Cret in Gothic style. Located south of the gymnasium and west of North Barracks. Sometimes called West Barracks.

NEW SOUTH BARRACKS (1961). Designed by O'Connor and Kilham, in Gothic style. The new barracks, consisting of two buildings, are located on the site formerly occupied by the north wing of the Hospital and were completed in July 1962.

NORTH BARRACKS (1908). Designed by Cram, Goodhue, and Ferguson in Gothic style. Located at Jefferson Road and Scott Place. The chaplain's office is on the ground floor in the southeast corner.



Old Cadet Chapel

OLD CADET CHAPEL (1837). Architect unknown. Designed in Greco-Roman style. It was located originally where Bartlett Hall now stands; in 1911 it was moved to its present site at the entrance to the cemetery. The American artist, Robert W. Weir, professor of drawing at the Academy from 1834 to 1876, painted the mural, entitled "War and Peace," on the wall behind the altar. The chapel is used now for funeral services, and for Jewish religious services. The seating capacity is about 450.

ORDNANCE AUTOMOTIVE LABORATORY (1939). Designed by Paul Philippe Cret in Gothic style. Located on Howard Road.

SMITH RINK (1931). The indoor ice-skating rink, located on the east side of Mills Road south of the reservoir. It is named after Maj. Gen. William R. Smith, USMA 1892, Superintendent 1928-1932.

SOUTH BARRACKS (1931). Designed by William Gehron in Gothic style. Located at the southwest corner of Thayer and Brewerton Roads.

THAYER HALL (1958). This is an entirely new structure, built within the walls of the old Riding Hall. The building, designed by Gehron and Seltzer of New York, is of structural steel framing with reinforced concrete, completely air conditioned, and practically windowless. Besides

administrative space for the Departments of English, Foreign Languages, Law, Mathematics, Military Art and Engineering, Military Psychology and Leadership, Ordnance, and Social Sciences, it includes 98 classrooms, the Academic Computer Center, educational TV studio, two 200-seat map-problem rooms, an 800-seat auditorium, a 1,500-seat auditorium, a materials testing laboratory, and space on the first and second floors for the Museum which was formerly in the Administration Building. Roof parking for 200 automobiles also has been provided.

UNITED STATES HOTEL THAYER (1926, 1948). Designed by Caugey and Evans in Tudor style. Located on the east side of Thayer Road just north of the Thayer Gate. It is owned by the Government. Including the addition completed in 1948, there are accommodations for 500 guests.

UTILITIES BUILDING (1935). Designed by the Quartermaster Corps in Tudor style. Located at Ruger and Tower Roads. It contains the Post Exchange and the Commissary; and the offices of the Engineer, and the Transportation Officer.

WASHINGTON HALL (1929). Designed by William Gehron in Gothic style. Located on Jefferson Road between Central Barracks and North Barracks. It is the Cadet Dining Hall and contains the offices and drafting rooms of the Department of Earth, Space and Graphic Sciences. An addition to this structure is now under construction which will billet 1,200 Cadets and will be completed in the Fall of 1968.

WEST POINT ARMY MESS (1903, 1963). The official name of the Officer's Club. Designed by McKim, Mead, and White in Classic style. Located on Cullum Road, south of Cullum Hall.

Grounds

CAMP BUCKNER (1945). The summer training camp for the Third Class, located on the reservation five miles southwest of the Post proper, and known formerly as Camp Popolopen. Renamed in honor of Lt. Gen. Simon Bolivar Buckner, USMA 1908, killed at Okinawa in 1945.

CLINTON FIELD. Located immediately north of Doubleday Field and west of Fort Clinton. The name of the field derives from the Fort, named for a Revolutionary War general. Clinton Field was the site of the cadets' summer encampment from 1819 to 1942. It is used now for soccer, football, and lacrosse.

DELAFIELD POND. The outdoor swimming pool, located on Delafield Road. Named after Maj. Gen. Richard Delafield, USMA 1818, Superintendent, 1838-1845 and 1856-1861.

DOUBLEDAY FIELD (1939). Baseball field, located between Thayer and Cullum Roads, east of The Parade. Named in honor of Maj. Gen. Abner Doubleday, USMA 1842, who is said to have laid out the first modern baseball diamond at Cooperstown, N.Y., in 1839.

FLIRTATION WALK. A foot trail extending three-quarters of a mile along the river from Cullum Road to Battle Monument and open only to cadets and their guests. It is probably that the early Chain Battery Walk is now included in Flirtation Walk.

HOWZE FIELD. Located directly south of Michie Stadium, and bounded by Mills Road on the east, by Howze Place on the south, and by Delafield Road on the west. A large recreation field, it was named in honor of Maj. Gen. Robert Lee Howze, USMA 1888, Commandant of Cadets, 1905–1909.

THE PARADE. The drill and parade field, bounded by Jefferson Road on the south and west, by Thayer Road on the east, and Washington Road on the north.

THE PLAIN. That portion of the ground embracing The Parade, Clinton Field, and Doubleday Field.

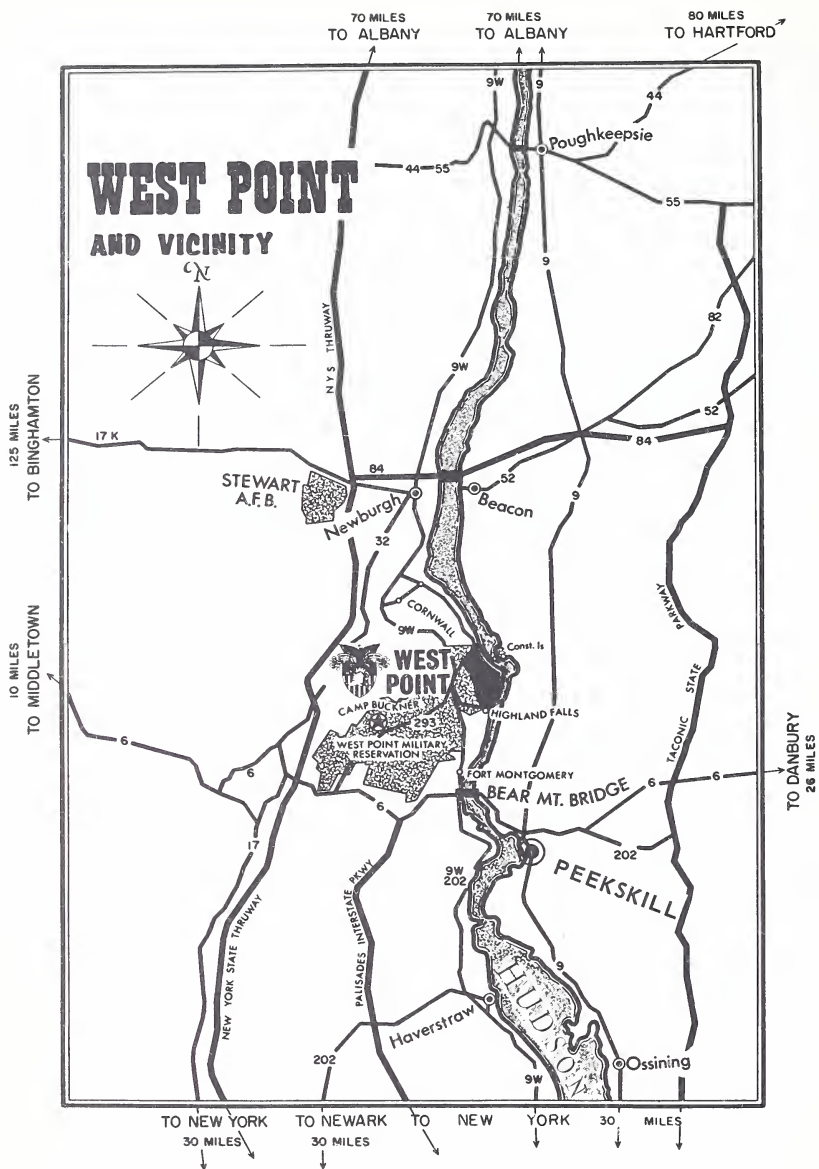
SHEA STADIUM (1958). Track and field stadium, located northwest of the Field House. Named for Lt. Richard Thomas Shea, Jr., USMA 1952, captain of the 1952 track and field team, star athlete and record holder, killed in Korea in 1953 and posthumously awarded the Medal of Honor.





LEGEND

- | | |
|--------------------------------|---------------------------|
| 1. Visitors Information Center | 26. Washington Hall |
| 2. Hotel Thayer | 27. Cadet Chapel |
| 3. Snack Bar | 28. Catholic Chapel |
| 4. Bus Parking | 29. Old Cadet Chapel |
| 5. Thayer Hall | 30. Michie Stadium |
| 6. Museum | 31. Smith Rink |
| 7. Administration Building | 32. Fort Putnam |
| 8. U. S. Army Hospital | 33. Amphitheatre |
| 9. Grant Hall | 34. Main Snack Bar |
| 9-15. Cadet Barracks | 35. Fieldhouse |
| 16. Bartlett Hall | 36. Public Parking |
| 17. Library | A. Patton Monument |
| 18. Cullum Hall | B. Thayer Monument |
| 19. Doubleday Field | C. Sedgwick Monument |
| 20. Fort Clinton | D. Battle Monument |
| 21. Superintendent's Quarters | E. Washington Monument |
| 22. Commandant's Quarters | F. Kosciuszko Monument |
| 23. Dean's Quarters | G. Wirt Robinson Monument |
| 24. Trophy Point | H. Air Cadet Memorial |
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For information concerning Admission to the United States Military Academy

Write

Director of Admissions and Registrar
United States Military Academy
West Point, New York 10996

For information concerning visits to the United States Military Academy

Write

Information Officer
United States Military Academy
West Point, New York 10996



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